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ERNEST ALBEE, WILLIAM A. HAMMOND,
and FRANK THILLY

OF THE SAGE SCHOOL OF PHILOSOPHY, CORNELL UNIVERSITY

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THE PHILOSOPHICAL REVIEW.

MIND IN PLATONISM.

THE aim of the present investigation is to put together the various statements as to the nature and function of mind in the Platonic Dialogues, so as to penetrate behind the particularities of special contexts and discover the essential meaning which the term has in the logical system which we call, after the name of its chief representative, Platonism. We shall begin without prejudice,[1] using the term in the broadest and most general sense that we find, and shall proceed empirically, passing by due gradations from the many to the one, in the hope of thus reaching a conclusion which should be final.

For the typical post-Heraclitean Hellenic thinker, physical nature is obviously a texture of motions or, perhaps, of moving particles, *A, B, C. . . . B* receives motion from impact with an already moving *A* and passes on the motion, by impact, to *C*, and the general texture of the physical universe is thus an affair of motions transmitted by impact. To the scientific Greek, fertile in hypotheses, this situation suggested many problems. Amongst others, the question as to the *source* of the motions whose interplay constituted the physical drama was asked and answered in a

[1] To those who accept the usual view of Platonic thought as essentially transcendental, the present investigation will appear 'un-Platonic' and specifically Aristotelian. It rests, however, upon a study of *the whole* of the evidence contained in the Dialogues. In particular, the reason for beginning with a discussion of motion is suggested by *Soph.*, 249*b*, as well as by Bk. X of the *Laws*. Beare's caveat against such an investigation (*Gk. Theor. of Elem. Cognition*, p. 8) seems to the present writer an example of *ignava ratio*.

variety of ways. The answer which appealed most to the Platonic Socrates, as to Aristotle later, was the suggestion, ascribed to Anaxagoras,[2] that mind is somehow the *fons et origo* of the whole business, the efficient, formal, and final cause of the entire physical drama. At present, we are concerned with the efficient cause only. The efficient spring, or moving cause of the motions whose transmissions constitute the physical world, is mind. The motion ascribed to mind is thus, not transmitted, but original motion, spontaneous or self-motion, pictured as circular motion, continuous movement around a centre.[3] Merely transmitted motion is the criterion of inert matter; originated or self-motion, the power to originate movements in the material world, expressing itself, primarily, in the form of circular motion, is the criterion of life and consciousness.[4] For Thales the loadstone is alive, because it can move iron, and for Plato and Aristotle, no less than for the average Greek, the planets are alive because of their regular self-motion.[5]

In these cases, mind and matter are thought of as combined, but the theory we are considering, even in its historical origins, always maintained that mind could be thought of as existing apart from any physical embodiment. While it is admitted that mind can enter into matter, and give direction to it, the fundamental separateness of mind is insisted upon by Anaxagoras.[6] So too for Plato and Aristotle. Mind is considered at times as something immaterial, wholly separate from and antithetical to physical things, and at other times as in the closest interaction and connection with physical things, *i.e.*, with a body in a physical environment. It is in this empirical sense that we shall continue to study mind for the present. Mind, then, is a living centre of energy associated with physical particles in the form of a body, which it

[2] *Phaedo*, 97*b*–*c*; *Cratyl.*, 400*a*. Aristotle (*Metaph.*, 984*b* 16 ff.) is aware that Anaxagoras is not the first to make this suggestion, but does not realise that it is at least implicit in the thought of Xenophanes and even Heraclitus.

[3] *Tim.*, 34*a*, etc.; *Laws*, 895*b*, f., 897*c*, f., etc. For Anaxagoras, *cf.* Ritter & Preller, § 155.

[4] *Laws*, 895*c*. *Cf. Cratyl.*, 400*ab*; *Soph.*, 247*d*–*e*, 248*e*, f.

[5] *Laws*, 898*c*, f., 966*e*, f.; *cf.* 886*a*, f.

[6] *Cratyl.*, 413*d*. *Cf.* Ritter & Preller, § 160*b*.

moves directly, and whose motion becomes transmitted, by impact, to other bodies.

We have now a physical universe composed of moving bodies *A, B, C.* . . . These bodies, in physical interaction with other physical bodies, are all transmitting motions, but some of them, *N* or *M*, are also capable of originating motions, primarily circular motions within the space occupied by *N* or *M*, but indirectly transmitted, in any number of the possible forms of motion, to *A, B, C.* . . .[7] As members of the physical system, *N* and *M* are of course liable to all the physical changes which affect *A, B, C,* . . . perpetually losing or gaining part of the earth, water, fire, and air which constitute their physical substance.[8] As far as *A, B, C* . . . are concerned, such gain or loss is associated with no consciousness whatever, but in the cases of *N* and *M*, the centres of energy with which these are associated are affected by certain of the changes, and are conscious of the greater gains or losses of substance. Indeed, there tend to develop specialised receptors, sense-organs for appreciating certain types of vibration, for the centre of energy is of course influenced by the instrument through which it transmits its motions.[9] In the same way, *N* or *M* tends to develop special transmittors for the transference of the central energy to *A, B, C.* . . . A particular mind is thus a living centre of energy associated with an instrument for receiving and transmitting energy, and limited, to some extent, by the limitations of this transmitting and receiving instrument.[10]

These two specialised developments of the instrument are related to each other in the closest possible way, so that the origination of motion, though spontaneous, is connected with the motions transmitted *via* the receptors to the vital centre. These motions stimulate responses, and the originated motions thus assume the character of purposive reactions to stimuli. *N* or *M* is now regarded as an organism in vital action and reaction with the environment, conscious, to some extent, of environmental stimulation and its

[7] *Laws*, 893*b*, ff., with Ritter's notes.

[8] *Tim.*, 42*a*, 56*c*, f., 77*a*.

[9] *Theaet.*, 182*a*, f., 184*d*; *Tim.*, 43*b*, f.; *Phileb.*, 33*c*, f. For Anaxagoras, *cf.* Ritter & Preller, § 155.

[10] *Phaedo*, 79*b*, etc.; *Rep.*, 455*b*.

own purposive reaction, and distinguishing, in the environment, (*a*) inert matter from (*b*) other organisms endowed, like itself, with spontaneous and purposive reaction-systems.[11] These latter are regarded as possessing life and consciousness, and thus as capable of entering into a new kind of relationship with *N* or *M*.

The stimulations which have value for the organism are not any and every kind of motion as such. They are specific stimuli, primarily of a biological type, stimulations which set some instinctive action-system in *N* or *M* functioning in a way which is important if *N* or *M* is to live an earthly life. An organism which is to preserve itself against the constant strain of environmental wear and tear must meet loss of substance by some way of repairing tissue, *i.e.*, must experience the stimulation of hunger and thirst, and must react by taking out of the environment enough material to build up again the tissue which has been wasted, and thus replenish the stores of energy which keep in trim the instrument through which the vital centre acts. That is to say, the receptors must be especially adapted for the apprehension of every thing in the environment which is beneficial or harmful, in the way of food or drink.[12] Similarly, the transmittors must be adapted for the selection and preparation of food and drink, as well as for its proper assimilation. That is to say, the human organism must possess, in germ, the power of utilizing the environment so as to plough land, sow seed, reap the harvest, cook and digest the food, etc. It must also be able to obtain shelter from the climate, in the form of clothing and housing, etc. All this is elementary,[13] and stimulations connected with these simple needs will have immediate and obvious value for the organism, calling forth mechanically, or quasi-mechanically, the appropriate reactions, if the organism is to continue in existence.

In the same way, in relation to *M*, other organisms also engaged in obtaining from the environment sufficient food and shelter to maintain themselves in existence, *N* will require to appreciate the value, whether positive or negative, of certain social stimuli, and

[11] *Phaedo*, 99*a*, f.; *Tim.*, 46*c–d*.

[12] *Tim.*, 42*a*, 77*a*, f.; *Phileb.*, 34*d*, f.

[13] *Rep.*, 369*c*, f.; *Laws*, 678*e*, f., 782*d*, f.

to react accordingly, if *N* is to continue in existence. Thus fear of wild animals, added to general sociability, the positive tendency, induces men to herd together, to build common walls for protection, and to enter upon the whole complex of social relationships in the way of competition and coöperation which are involved in the situation thus created. The strongest social instincts are those connected with sex and with family life, but the others are also powerful.[14]

As we now understand the matter, minds are living centres of energy associated with complex instrumentalities for appreciating and reacting towards environmental stimulations which have biological and social value for the organism. Out of social life there develop, further, whole systems of political and educational values, which call for further refinements in appreciation and reaction, so that the conscious life of the more highly developed organisms becomes extremely complex, and indeed tends to increase in complexity.

Let us pause here, in order to consider a little more deeply what is involved (1) in the instrumentalities of appreciation, the receptors which select from the environment those motions which have value for the organism and are thus regarded as stimuli, and (2) in the instrumentalities of response, the reaction-systems which translate the spontaneous motive principle into specialized forms of motion minutely adapted to the various stimuli, physical, biological, and social, which have definite value for the organism.

1. The receptors are thought of especially as the peripheral organs concerned in sensation, the skin, tongue, ear, eye, etc. As all motion is transmitted by physical impact, the reception of motion depends upon changes in the peripheral region of the body being produced by impact and being conveyed inward through appropriate channels. It is obvious that the most fundamental of the senses will be some form of contact-sense, and touch, which is the least specialized of our senses, and the most widely diffused over the surface of the body, is so regarded. This is understood to include, not merely appreciation of impacts as such, but also some apprehension of roughness and smoothness, lightness and

[14] *Prtg.*, 322*b*, ff.; *Rep.*, 369*b*, ff., 458*d*; *Laws*, 678*c*, ff., 781*e*, ff.

heaviness, warmth and coolness, which are directly connected with pressure upon the surface of the body causing direct alterations in the skin.[15] All other sensations are specialized forms of this contact sense, the motions of the external world which have value for the organism being filtered out by means of specially constructed organs which receive these motions and convey them, *via* movements taking place in appropriate ducts, to the brain and spinal cord. Thus taste arises out of contacts with the tongue producing changes of roughness and smoothness, of warmth and coolness, and certain chemical changes, which are transmitted to the central organs by movements in the ducts which run from the tongue inwards.[16] Hearing arises from the impact of air-waves passing their motions through the ear to the brain and cord, *via* the motions which take place in the appropriate ducts, differences of pitch being directly connected with the differences in the rate of the motions involved.[17] Vision arises from the impact of light-rays coming, originally, from the sun and being deflected from the surface of some visible body in such a way as to stimulate the kindred substance in the eye, and by means of the resulting changes to pass their motions on to the seat of consciousness within.[18] Finally, organic sensations, connected with changes in the digestive and reproductive organs, pass their somewhat irregular motions along the 'spinal marrow' up to the brain, where they may produce serious disturbances.[19] Each sense-organ is, in fact, a mechanism for selecting and concentrating certain of the external motions which have value for the organism, bringing to a common focus the light-rays,[20] sound-waves, etc., in such a way that they are brought to the brain and cord in a form which is one instead of many, and orderly instead of chaotic. It is, however, not denied that these external impacts are all more or less violent

[15] *Tim.*, 61*d*, f., 64*a*.

[16] *Tim.*, 65*d*, f.

[17] *Tim.*, 67*b*, 80*a–b*.

[18] *Tim.*, 45*b*, f.; *Rep.*, 507*d*, f. The intra-ocular rays correspond roughly, in function, to what modern psychology calls the *Eigenlicht*.

[19] *Tim.*, 43*b*, 44*b*, 70*a*, f., 91*a*, f.; *Rep.*, 571*c*, f.

[20] This must not be understood literally. Plato does not pay attention to the function of the lens, or of the retinal image.

shocks which, primarily at any rate, interfere with the smooth running of the internal motions.[21]

2. The transmittors are thought of mainly as outgrowths from the brain. Of these, the chief is the spinal cord, enclosed, like the brain proper, in a protective bony covering. In the case of the cord, this covering is flexible, and is provided with sinews, so as to admit of movement. The whole is further covered by somatic tissue which acts as a protection against violent impacts such as occur, *e.g.*, in falling, and against sudden changes, *e.g.*, of temperature.[22] By means of the cord, movements originating in the brain are transmitted directly to the thoracic and abdominal segments of the body, controlling, as far as possible, the somewhat unruly motions of the organs located in those segments.[23] Further transmittors, constructed out of similar tissue and thought of as direct outgrowths from the cord, are the tracts which lead to the extremities of the arms and legs, and are enclosed, like the cord, in a flexible bony covering provided with sinews and protected by somatic tissue.[24] The final protective coverings of skin, hair, and nails are outgrowths of somatic tissue controlled, somewhat indirectly, by cerebral emanations.[25] The whole system transmits centrally aroused motions to the external world by means of (*a*) the unspecialized surface of the body, and (*b*) the specialized instruments found at the extremities, particularly the hands.[26]

A secondary complex of motion-transmittors within the body, only indirectly subject to the control of the brain and cord, corresponds fairly closely to what we nowadays regard as the organs connected by the sympathetic nervous system. Of these, the chief is the circulatory system, with the heart as centre. This is closely connected with the functions of respiration on the one hand, and digestion and excretion on the other, though the abdomen and pelvic organs generally are sometimes classed together as being

[21] *Tim.*, 43*a*, ff.; *Phileb.*, 33*d*.
[22] *Tim.*, 73*b*, ff.
[23] *Tim.*, 69*b*, ff.; *cf.* 91*c–d*.
[24] *Tim.*, 75*a*, f.
[25] *Tim.*, 76*a*, f.
[26] *Cf. Laws*, 794*d*, f.

more irregular in their motions and less amenable to central control than the heart.[27]

Genetically, the whole apparatus thus involved in the reception and transmission of motions develops, in reaction with the environment, out of a single tissue. The cerebro-spinal tissue is thought of as constituted by a multitude of micro-organisms which are the ultimate physical seat of life, and it is out of this as yet undifferentiated tissue, by subdivision and growth under appropriate conditions, that the other tissues and the whole body develop to maturity.[28] The mechanism as a whole is so complex that it easily gets out of order, and so delicate that excessive motions, whether in the physical environment or in some inadequately controlled portion of the mechanism itself, temporarily interfere with the central self-motion and make of the body as a whole anything but a single machine. And it is not only in relation to the primitive organs connected with nutrition and reproduction that such disorganising forces are noted. Where the central self-motion is weak and environmental influences are strong, continuous stimulation may develop almost any system of reaction-tendencies in a one-sided way, so that it will upset the proper balance of the parts and attempt to get control over the organism.[29] Continuous devotion to gymnastic brutalises; continuous devotion to music produces effeminacy; a one-sided pursuit of learning results in gaucherie; etc. The first task of the central self-motion is to acquire control over the whole mechanism, so that the transmittors as well as the receptors will coördinate and concentrate the motions which fall within their scope, and thus present an orderly, systematic, and unified front to the relatively unorganized motions in the external world.[30]

This acquisition of central control is brought about by training, physical, moral, and social, aided by all the resources of literature and art. The organism thus comes to develop, out of its original receptors and transmittors, not merely mastery over walking and the simpler physical adjustments, but also systematic dispositions

[27] *Tim.*, 70*b*, f., 77*c*, ff.
[28] *Tim.*, 73*b*, f., 91*a*, f.
[29] *Cf. Rep.*, 444*b*, f., 561*b*, f., 572*d*, f., 586*e*, f.
[30] *Rep.*, 443*c*, f., 591*d*, f. *Cf. Gorg.*, 503*d*, ff.

towards friendliness and regard for others, towards dignity, manliness, self-control, and singleness of aim, towards love of the beautiful in every shape and form, a feeling for the value of religion, and some premonitory sense of the value of reason.[81] The organism now functions, not in sections, one part reacting to stimulation *A*, while another part is responding to stimulation *B*, with little or no connection between the two reactions, but as a united totality reacting, as a single purposive whole, to both stimulations. Motions from the outer world awaken the system as a whole, and the biologically or socially appropriate physical reaction follows with almost mechanical smoothness and regularity, so that consciousness, while highly complex, is still chiefly an awareness of the functioning of the reaction-mechanisms in response to sensory stimulations.

Here, however, it becomes necessary to notice something further, something which takes us beyond the broadest and most general view of mind as mere consciousness of bodily functioning, and leads to the view of mind as self-consciousness, reflective awareness of its own powers in distinction from the mechanisms of its body. In order for the body to react, it must be supplied with receptors as well as with transmittors. But our sense-organs, while responsive especially to motions which are of directly biological significance, are, in the nature of the case, capable of appreciating motions which are only very indirectly connected with the great primary instincts. The eye, in order to be able to detect the visual indications of food, etc., must be able to appreciate colour, whether this is directly connected with food or not. It follows that, after food has been selected, the eye is free to appreciate colour in other connections also. The ear, if it is to catch the auditory indications of food, affection, and danger, must be able to appreciate sounds as such, whether directly connected with biological needs or not. It follows that, when those needs have been satisfied, the residuum of sound in the environment can be appreciated in leisure moments. The use of our sense-organs is wider than strictly biological necessity requires, and may thus, under appropriate conditions, lead to the reception of experiences

[81] *Rep.*, 378, ff., 386–402, *passim*, 522*a*–*b*.

which will broaden and deepen indefinitely the range of consciousness.[32]

Again, the synthetic tendency of consciousness, which in relation to the receptors reduces the many stimulations to unity, and in relation to the transmittors produces a unified, organized response, is, as such, necessarily susceptible of a development which far transcends the original needs of day-to-day living. The ordinary effect of a given stimulus is to pass over into action, by means of the appropriate systematic channels of expression which the organism has developed. It gives rise only to a very simple problem, and the problem is immediately and almost automatically solved. But certain stimuli produce a different sort of effect. It sometimes happens that contrary stimulations occur at the same time. In this case, they cannot pass over into immediate action, but balance and hold each other in suspense, and the tension cannot be relieved until the new problem, the problem of opposition and conflict, has been solved. This new problem, however, cannot be solved automatically. Other forces, besides simple sensori-motor reaction, must be brought into play, viz., comparison, deliberation, analysis, and judgment, and the first result of their activity is, not physical reaction, but an intellectual concept.[33] When two sensations refuse to fit in with one another and flow together into action—and such perplexing difficulties frequently arise out of the fluctuations and contradictions of sensuous experience—we seek a one in this many, a unity which can overcome these differences, a way out of the sensory contradiction, by rising into the conceptual realm.[34] For example, our sensory intimations of magnitude are subject to well-known illusions, so that an object which in one relation appears small, in another appears large, and in the field of touch an object may appear hard in one relation and soft in another, just as in the field of hearing one and the same sound may appear to different persons to have different degrees of loudness, or may appear to be, now loud, now soft, to one and the same person. Such fluctuations generate nothing but a baffling sense

[32] *Tim.*, 46*e*, f.

[33] *Rep.*, 523*b*, ff.; *Theaet.*, 184*e*, ff. *Cf. Polit.*, 278, f.

[34] *Phaedo*, 65*b*, ff.; *Theaet.*, 187*a*.

of confusion, until, by processes of analysis, comparison, and standardization, the mind obtains the concepts of greatness-as-such, which can never be mistaken for smallness, and smallness-as-such, which can never be confused with greatness, and distinct concepts of hardness, softness, loudness, etc., thus gradually rising entirely out of the level of sensuous experience and entering the clear-cut level of conceptual experience.[35]

The first awakening of the mind to these intellectual notions is purely temporary, and still dreamlike in character. Problems and questions lead, indeed, to concepts and stimulate intellectual life and growth. But unless the problems are repeated and occur in a wide variety of forms, the mind easily lapses back into the ordinary twilight awareness of sensori-motor processes.[36] On the other hand, if such problems force themselves repeatedly upon the growing mind, as under the purposive stimulation of an older teacher, one of the first results of the newly awakened intellectual consciousness is to become fascinated by the game of conceptual manipulation, "rolling up the many into the one, and unrolling the one again into the many," as Plato puts it, or, like a playful puppy, tearing everything to pieces, and making shreds and tatters out of old beliefs, however venerable, in enthusiasm for the new pursuit.[37] In the case of the highest ideas of all, most men remain permanently in the dreamy or twilight state of consciousness, owing partly to their unfamiliarity with these ideas, partly to the intrinsic difficulty of the subject, and partly to the absence of proper method in the approach to the study of these ideas.[38] Plato himself proposes to turn the mind very gradually into the new direction, building up a firm basis by many years' study of the arts and sciences, before the student is permitted to enter upon the more formal study of dialectic and intellectual gymnastics proper. The somewhat formal study of mathematics, physics, astronomy, and harmonics is carried through with the definite idea of familiarizing the student with the intellectual world, as well as stimulating him to attack and solve intellectual problems,

[35] *Phaedo*, 100*e*, ff.; *Rep.*, 524*c*, f.; *Theaet.*, 154, ff. *Cf. Parm.*, 129, ff.
[36] *Meno*, 85*c*, f., 86*a*, f.; *Theaet.*, 150*e*. *Cf. Rep.*, 475*d*, f.
[37] *Rep.*, 497*d*, f., 537*e*, ff.; *Phileb.*, 15*d*, f. *Cf. Euthyd.*, 275*c*, ff.
[38] *Phaedr.*, 250*b*, *d–e*; *Polit.*, 277*c*, 285*e*, f.; *Phileb.*, 17*a*.

as such. Given these years of preparation, it is expected that the student will not lapse back into the life of sensation, habit, and convention, but will be stimulated to remain in the intellectual world, pushing on from one problem to another, and seeking eventually a solution of the dialectical problem, the search for an unhypothetical first principle, the principle of ideality itself.[39]

Such concepts, then, as hardness, softness, greatness, smallness, etc., originate, by analysis and standardization, from the challenging perplexities of sensory experience. Another group of concepts also originate from sensory experience, but are not felt at first as giving rise to any perplexities. Such concepts as finger, man, ox, fire, earth, etc., are taken up into the mind by way of sensuous experiences as concrete objects, without any feeling of puzzlement or contradiction. They are taken up unreflectingly, and it is not usual to attend especially to their essence or meaning, as this would be expressed in a scientific definition, because no question arises. Every-day experience seems to be their guarantee. So too of the concepts which arise in ordinary social experience, such as farm, city, work, and the various excellences, moral and intellectual. These just grow up by the sifting processes of repeated sensation and association, at first without any need for reflective analysis and synthesis, and without the slightest feeling of difficulty. They are concepts at the level of what Plato calls 'opinion,' *i.e.*, at the ideational level which, with most people, does duty for 'mind.'[40] But when the intellectual life has once been awakened into thorough-going activity, and such conventional concepts of things and duties are subjected to questioning, whether sophistical or dialectical, then all such concepts, even those which have always been accepted as obvious and not suggesting the slightest difficulty, such as the concept of growth, are found to present unsuspected difficulties and to be riddled with contradictions of a most puzzling and challenging kind.[41]

In these difficulties, it becomes realised that empirical concepts are obtained by mind working through its sense-organs. The

[39] *Rep.*, 521*c*, ff., 533*c*, ff.

[40] *Meno*, 85*c*, 97*b*, f.; *Rep.*, 476*c*, ff.; *Tim.*, 51*d*, f.; *Phileb.*, 39*c*, f.

[41] *Phaedo*, 96, f.; *Rep.*, 537*e*, f.

content of such concepts as man, ox, shuttle, city, etc., is derived primarily from sensuous experience, at first of an unreflective type. The sense-organs focus for the mind certain recurring types of sensuous stimulation, reducing these to tactile, auditory, or visual form, so that they come to constitute rudimentary generalizations, unities of a sort. These unreflectively formed generalizations are very imperfect, when judged by the standard of unity, because our sensuous experiences fluctuate to such an extent that we are sometimes at a loss to know to what 'object' we should refer them, *e.g.*, whether a distant stimulus is to be interpreted as a living man, or as a scarecrow or some figure made by shepherds.[42] In the face of such puzzles, reflective consciousness is stimulated into activity and applies its methods of standardization, by analysis and synthesis working over these semi-generalizations and reducing the many to the principle of the one, much as in the case of hardness and softness, considered above.[43]

The process does not, however, come to an end with the standardization of sensuous experiences. When once our intellectual life has been awakened into vigorous exercise, reflection proceeds further and develops other ideas, concepts of a more formal type, which result from comparing the various operations of the mind itself. Take, *e.g.*, such concepts as ox, horse, man, etc. On the concrete side, as contents, they originate in sensation. But on the formal side, as concepts, they are meanings or essences, products of an analytic-synthetic process which picks out identities, distinguishes differences, enumerates characteristics, defines, classifies, and systematizes, seeking everywhere some deeper principle of unity which will bring together the apparent manifold in a way which the mind can grasp and understand. Reflection upon these operations of the mind gives us such ideas as identity and difference, unity, duality, triplicity, etc., and conceptuality itself, with all which these ideas imply in their various relations. For it is not only in relation to sensory experiences that the mind operates in these ways. Concepts also can be compared and counted, identified and distinguished, systematized and transformed in

[42] *Phileb.*, 38*c*, f. *Cf. Theaet.*, 193*b*, f.
[43] *Polit.*, 277*e*, f., 285*b*.

relation to one another and to deeper underlying unities, *e.g.*, in relation to the ideal of systematic consistency and truth.[44] These formal concepts of second intension, then, while originating in relation to sensory contents, apply also to concepts on their formal side, or are strictly universal. They can thus be studied without further reference to sensory objects, and in this way we have the purely formal investigations of mathematics, logic, and dialectic, whose function is to explore the *mundus intelligibilis* from one end to the other, until mind finally comes to rest in its own principle, the principle of conceptualization itself.[45]

This principle once thoroughly grasped, the further work of mind consists in applying it to the formal disciplines themselves. Dialectic, mathematics, etc., are transformed so as to become an adequate expression of the intellectual principle; that is to say, they are converted into mental instruments for extracting the ideally utmost of meaning-value from the subject-matter to which they can be applied, and for concentrating this meaning-value into the form of a concept which is, as nearly as possible, fit to take its proper place in an ideally perfect system of concepts all grounded in the principle of conceptualization. Thus considered, the work of mind, once the fundamental principle has been grasped, consists in perfecting its own mental instruments and then, through their instrumentality, conceptualizing experience, raising it from the mainly sensuous and emotional level to the level at which its significance becomes completely permeable to intelligence and is reduced, without remainder, to conceptual formulations, all alike grounded in their own principle.[46]

The activity of mind is not, however, devoted merely to the specifically intellectual work of transforming sensuous into conceptual experience. It is an organizing energy which concentrates into consistent and harmonious activity all aspects of life, reduc-

[44] *Phaedo*, 74*a*, f., 78*d*, 100*b*, 102*b*, f.; *Theaet.*, 185*d–e*; *Soph.*, 251*d*, ff.

[45] *Rep.*, 510*d*, f., 517*b*, f., 525*d*, f., 532*a*, ff.

[46] *Rep.*, 511*b–c*, 540*a–b*. The ascent seems to be accomplished by withdrawal from senuous and emotional experience, and by concentration upon the formal elements in experience until their principle is grasped, in a process which resembles etiolation. After this comes the descent, *i.e.*, the arduous task of idealizing human experience, making it over in the light of the ideal principle.

ing the many, in every field of experience, to the principle of the one. In the field of practical experience, the individual, torn in different directions by his sensuous and rational impulses, and only very partially assisted by social conventions in his struggle for a genuine individuality, tends eventually to give up the attempt and thus remains many rather than one. But mind, when once he has penetrated to its principle, aids him in organizing all the forces of his character so as to extract the maximal life-value from each in consistent, systematic, and harmonious unity with the maximal positive value of the rest. His various tendencies cease to conflict in the stupid way which is characteristic of them at the instinctive, unenlightened level. His eating ceases to be gluttonous, and his sleeping ceases to be lazy. Enlightened by the vision of life-as-it-should-be, a harmonious texture of impulses all alike rationalised, all alike converted into constituent elements of the well-planned life of reason, he so trains and educates his various tendencies that they all contribute to the development of the higher personality, whose every energy, physical, social, moral, and intellectual, is dedicated to the progressive idealization of self and of the world.[47] So too on the wider field of civic life. The principle of mind finds for all the cross currents of civic life their proper place in the ideal city wherein every element of civic value receives its ideally fitting place, all harmoniously working together towards the gradual realization of the civic ideal.[48]

So, again, in the field of art. The creative artist tends to let himself go, to yield to the impulses which inspire him and to create whatever the creative urge suggests to him. Vivid contrasts which stimulate the emotions, sudden changes, rapid fluctuations, exciting situations of any and every description, lend themselves to the purposes of artistic creation.[49] Of themselves, however, such situations, while appealing strongly to the artist's magical powers, are devoid of inner coherence, unity, and meaning. The artist is no philosophical interpreter of life as a totality representing ideally the harmonious result of all the contributions

[47] *Rep.*, 517*b–c*, 591*c*, f.; *cf.* 462*b*, ff.

[48] For a discussion of the evidence, *cf. Philosophical Essays Presented to John Watson*, 1923, pp. 91–95.

[49] *Ion*, 533*d*, ff.; *Rep.*, 603*c*, ff.; *Phaedr.*, 245*a–b*; *Laws*, 719*b–c*.

made by individual men and women, but is a pure impressionist, reproducing, in rhythmic forms which make a powerful appeal to human sensibilities, all kinds of images, momentary insights, suggestions of things unutterable, each of which is itself an independent individual and declines to join with the others in constituting a single consistent system which the mind can grasp. The philosopher whose thought has penetrated to the principle of mind has lost, perhaps, his artistic creativity, the power of yielding and giving himself up *sans arrière pensée* to the impulse of the moment. The forces of nature, thunder, lightning, and storms, are coolly judged to be without especial significance, and are not permitted to awaken humble, imitative impulses. The machines created by man, with their ropes, pulleys, and wheels, are judged to be what they are, viz., neither more nor less than useful machinery, and awaken no admiring wonder and imitative creation.[50] So also the rise and fall of human fortunes, human hopes and fears, pain, misery, and even death, are apprehended by the philosophical intellect in as dispassionate a manner as possible. The philosopher gives way before their power as little as he can, and despises the artistic stooping to reproduce such situations in tragedy, as unmanly and irrational.[51] The rational man has thus lost the ability to let himself go and create, and accordingly leaves to others the composition of moonlight sonatas and strange, tragical histories. But he has gained something which the artist never had: the ability to judge. With his new insight into nature and human nature, he can judge, coolly and accurately, which of the various productions of his artistic co-evals contain a measure of truth and are likely to be of value in kindling the imagination of the rising generation to the beauty of idealism in every shape and form. As a censor, he can thus suppress what is harmful and encourage whatever artistic creations are helpful in preparing the less rational sides of human nature for idealistic development, and can see to it that whatever has value for the community receives community sanction.[52]

[50] *Rep.*, 396*b*, 397*a*, 596*c*, ff., 600*e*, f.

[51] *Rep.*, 395*d*, f., 603*e*, ff.

[52] *Rep.*, 376*e*, ff., 389*d*, f., 400*d*, ff.; *Phaedr.*, 245*a*, 265*b*; *Laws*, 801*c*, 814*e*, ff., 817*d–e*, 936*a*.

So too in the field of religion. We all have in us something which responds naturally to the power everywhere revealed in the world around us and in the workings of the human heart. Rivers, seas, and tempests, the moon, stars, and sun, all the forces of nature seem like workings of spirit, purposive, though with purposes only partly comprehensible in comparison with human infirmities of purpose, regularities which seem like ideal patterns in comparison with our human waverings and uncertainties, periodicities which constitute a moving image of eternity itself, and serve to regulate our human time-measurements. In a word, nature witnesses everywhere to the workings of spirits more powerful and more rational than ourselves, spirits more ideal in every way, Gods.[53] Our natural attitude towards such beings is one of worship, prayer, and service, and temples, with rituals expressing abasement, penitence, and willing self-surrender which leads to some sort of companionship, are the simple and inevitable outcome of this natural attitude. For to these spirits we are, after all, akin, and they are not only our creators, but also our preservers, the sources of all good to us both in this life and beyond the grave.[54] In default, however, of a clear tradition, our spiritual leaders, the poets, with their uncritical yielding to any strong impulse, have presented us with imaginative pictures which are neither always consistent nor always worthy; and the uninspired priestcraft of the professional ministers of our temples has mingled with the ideal intuitions of the poets institutions and rituals which, whatever their original symbolism, have degenerated into little more than entertainments, to be purchased by the vulgar rich, with an appeal to economic and political artifices which are degrading to God, priest, and parishioner alike.[55] So mingled with earthly dross has the religious tradition become by the fourth century, that spiritual leadership is sought in vain in the temples and holy places of Hellas, and intelligent students are turning hopelessly to atheism and the study of natural science, as a substi-

[53] *Cratyl.*, 397*c*, 408*d*; *Tim.*, 37*c*, ff.; *Laws*, 821*b*, f., 886*a*, 899, 901*c*, ff.

[54] *Euthyphr.*, 12*e*, ff.; *Phaedo*, 79*c*, f., 108*c*; *Laws*, 715*e*, f., 801*c*, ff., 887*c*, f., 900*a*.

[55] *Rep.*, 363, ff.; *Laws*, 716*e*, ff., 905*c*, ff. *Cf. Alc.*, II, 149*e*, f.

tute to fill their need.[56] If we can withdraw for awhile from these degraded and warring creeds to meditate upon the essential nature of spiritual experience, and succeed in penetrating to the principle of mind, we shall make three important discoveries. In the first place, we shall find that our original and primitive, natural belief in the universe as spiritually akin to what is deepest in our own nature, is upheld and strengthened by the fact that mind can attain satisfaction only in the contemplation of its own principle as ultimate. In the second place, we shall discover in the relation between our mental processes and the ideal or perfect mind, the rationale for faith, for the belief that the task of humanity consists in free coöperation with God in the work of impregnating reality with reason, and thus bring to the birth a more rational universe, a world which more completely realises the divinely ideal patterns.[57] Finally we have, in the principle of mind, a definite principle for reforming our traditional creeds, and so reorganising and purifying their content as, without abandoning their historical elements, to build up a ritual of prayer and worship which will be consistent, harmonious, and satisfactory to our deepest needs.[58]

In every field of experience, then, practical, aesthetical, scientific, and religious, mind reveals itself as the organizing principle which enables us to make the most of our resources, and build up, out of our varied and fluctuating experiences, an approximation to that systematic totality which we envisage as the Divine Experience, ideally real and ideally satisfying every human need which we can conceive as legitimate. Further study of the nature of mind consists in making explicit the relation of the human to the Divine Mind, and in drawing certain deductions, of which the following are perhaps the most important: (1) The principle of mind, viz., the principle of reorganizing the otherwise chaotic so as to enable it to realise its utmost of meaning-value, and to reduce it, as far as possible, to the concentrated unity of the intellectual concept, is formally identical in both cases. Like the hu-

[56] *Laws*, 886*d*, f., 889, f., 967; *cf.* 821*a*. *Cf. Apol.*, 26*c*, f.

[57] *Phaedo*, 66*a*, 79*b*, f., *etc.*; *Rep.*, 490, 500*b*, f., *etc.*; *Tim.*, 46*c*, 48*a*, 90*b*, f.; *Soph.*, 249; *Phileb.*, 23*d*, 28*c*, f.

[58] *Rep.*, 379, ff., 427*b*, f.; *Laws*, 738*b*, f., 799.

man mind, the Divine Mind is essentially a principle of order, converting everything in existence into a more adequate expression of this principle. The ordered sequences of the heavenly bodies, the apparently capricious storms and calms which affect the surface of the earth, the alterations in the internal economy of plants and animals which result in growth and development; in a word, the whole realm of physical law, is an expression of this principle, the idea of good.[59] The backward drag of matter, the tendency of the physical cosmos to lapse towards not-being if the Divine control is relaxed, is paralleled by the obstinate pull of human appetites away from the ideal and towards the brutish. Both alike have need of the constant watchfulness of mind, if the idea of good is to any extent to prevail.[60] (2) Out of this identity of task arises a sense of community, of fellowship and co-partnership of all minds in the real work of the world. The human mind which is struggling with the task of acquiring mastery over the forces of its own body, and reducing this to an instrument for the idealization of its immediate environment, feels a sense of fellowship, not only with other men, but also with the once human and now semi-divine minds which it believes to be wrestling with the task of acquiring mastery over the cosmic forces of some planet,[61] so as to convert this into a more adequate instrument for the idealization of the physical universe. This sense of fellowship extends even further, so as to include, not only the yet more divine minds believed to be working upon yet greater cosmic problems, but also the Divine Mind itself, the ideal principle conceived in living form.[62] For all alike represent the idea of good working at its own proper task of converting the environment into its own likeness and image. Finally (3) the centre for receiving and transmitting energy in accordance with the principle of self-motion which has gradually risen from the sensory to the conceptual level, from the conceptual level to the level of reflective self-consciousness, and from reflective self-consciousness to a thorough-going awareness of its fellowship and humble co-partner-

[59] *Tim.*, 28, ff.

[60] *Rep.*, 439, f., 608*e*, f.; *Tim.*, 70*e*, f.; *Polit.*, 269*c*, f., 272*e*, f.

[61] *Tim.*, 41*d–e*, 42*b*, f. *Cf. Laws*, 898*e*, f., 966*d*, f.

[62] *Gorg.*, 507*e*, f.; *Rep.*, 612*e*, f.; *Phileb.*, 39*e*, f.; *Laws*, 716*c*, f. *Cf. Phaedr.*, 247, f.; *Tim.*, 41*a*.

ship with the living principle of value which men call God, discovers that only in such service does it succeed in taking up value, life, and reality into its own processes, and seeks this highest human good in reverent assimilation of itself to God, re-forming its action-systems until they are modelled more exactly upon the Divine patterns, and devoting the rest of its life to filling, as worthily as may be, that place in the world which the Divine plan has prepared for it.[63]

To sum up: The function of sensation is *anamnesis,* the stimulating into activity of the life of mind, the awakening from the dreams and intimations of fluctuating and intuitive experience to the concepts of systematic, scientific knowledge, culminating in that perfect self-consciousness which is at the same time apprehension of the principle of ideality, involving an understanding of the nature of the world and of God, with all the consequences, practical, aesthetical, logical, and religious, which such an understanding necessarily implies. Thus understood as spiritual experience, 'mind' is the ultimate meaning of whatever has any sort of existence. The chaotic becomes cosmic, ordered, and meaningful, until the whole world is charged with purpose. These purposes become gradually conscious of themselves, of one another, of higher purposes, and finally of the spirit of purposiveness, becoming progressively more spiritual, more permeated with the unity and rationality of this spirit. This transmutation of fact into value, of matter into mind, of mechanism into purpose, and of purposes into a single system of coöperating spirits, is the characteristic work of Mind, of that ideal Experience which is the sole source of meaning and value wherever and however manifested,[64] taking up into itself and endowing with its own life all that, apart from this creative spirit, would remain eternally slumbering in the bosom of not-being. Thus conceived as ideal spiritual experience, mind is not merely the efficient cause, but also the formal and final cause of all that in any way attains to reality.

RUPERT CLENDON LODGE.

UNIVERSITY OF MANITOBA.

[63] *Rep.*, 540*a–b*; *Theaet.*, 176; *Laws*, 903*b*, f.

[64] *Tim.*, 30, ff.

SANTAYANA'S DOCTRINE OF ÆSTHETIC EXPRESSION.

SINCE the term 'expression' is the watchword of Croce and his disciples, and not only of these but of others who in certain respects differ widely from Croce, the connotation of the term in any considerable philosophy of the beautiful becomes a matter of primary interest. If in any given system the word does not serve as an alternative designation of beauty itself, it probably at least names one of the chief characteristics of beauty. Here then an inquiry into the meaning of a word tends to widen and deepen into the orientation of an æsthetic. Santayana's is such a "considerable philosophy of the beautiful," for he has a wide following not only among professed philosophers and psychologists who merely contemplate what they do not execute, but also among the exacting practitioners of the arts themselves, who quote his utterances approvingly in their critical writings;[1] and the conception of 'expression' functions crucially in his theory.

It is well-known that Croce makes art and expression coextensive: "Art is perfectly defined when it is simply defined as intuition."[2] "To intuit is to express; and nothing else (nothing more, but nothing less) than to express."[3] Bosanquet also stretches the term to the full compass of the theme of æsthetics: "To say that the æsthetic attitude is an attitude of expression, contains I believe if rightly understood the whole truth of the matter. . . . [Expression is] the keyword to a sound æsthetic."[4] And the doctrine of empathy—"the most commonly accepted of our time"—is based on the belief that a physical object may 'express' the inner psychical activity of a percipient. Santayana separates himself from all these interpreters at one stride by making expression, whatever he may mean by the term, not the whole but a part

[1] *E.g.*, Quiller-Couch in *Charles Dickens and other Victorians*, p. 55; "Academy Notes," The Buffalo Fine Arts Academy, Sept., 1907, p. 68.

[2] *Breviary of Æsthetic* (trans. Ainslie), Rice Institute Pamphlet, p. 250.

[3] *Æsthetic* (trans. Ainslie), sec. ed., p. 11.

[4] *Three Lectures on Æsthetics*, p. 33.

of æsthetic effect. For him it is only one of the three elements which combine to form the objectified pleasure which is beauty. The three constituents are, he says: (1) material beauty—sensuous imagery, vital feelings, simple colors and sounds and complex organic reverberations and reactions; (2) formal beauty—the arrangement of the sensuous and vital elements in pleasing shapes and patterns; and (3) expression, the quality acquired by objects through association, an associated value, the survival in presentation of the intent of a previous experience. Expression thus appears as a superadded charm; it is "the suggestion of some other and assignable object, from which the expressive thing borrows an interest."[5] The material and formal beauties of objects are, so to speak, dream-wares, utterly absurd and unmeaning from the standpoint of the logical understanding; expressive beauty has meaning; it "springs from beneath the surface," and is a "nether influence."[6]

In the first place, then, æsthetic expression for Santayana is a part of beauty rather than a synonym of it. In the second place, this part seems to possess a quality and origin, and therefore an individuality, of its own. It seems to be a distinguishable aspect or face of beauty and yet indeed to be more than this. At times it seems to have some capacity for existence over against its companion parts. Normally the three aspects are found together. But the objection to isolation of the parts would seem to be empirical only, not logical. To be sure, Santayana sometimes treats the parts as excisions and discriminations within a total content.[7] But the spirit of his whole philosophy is opposed to the notion of the logical compulsion of one term by another, and he does not appear persistently to imply that the matter, form, and expressiveness of beauty are bound to appear in conjunction. He says, it is true, that æsthetic effect has no parts when truly apprehended.[8] But in spite of this assertion, we shall see that he so treats the three elements that they seem to have the power of functioning independently; the flavor of each seems to remain whole and un-

[5] *The Sense of Beauty*, 1896, p. 85.
[6] See *Scepticism and Animal Faith*, 1924, pp. 137, 138.
[7] See *Sense of Beauty*, p. 76.
[8] *Ibid.*, p. 267.

impaired in the ripe mixture; no one part seems to be transmuted by the others or by the whole.

Concrete examples of the parts of beauty subsisting by themselves support the hypothesis that the words "excision and discrimination" as descriptive of matter, form, and expression have a relative and not an absolute force. We are told, for instance, of a landscape whose beauty is expressive only. If the landscape has pleasant associations for us, we may feel in the contemplation of it a "deep and intimate charm," however "empty and uninteresting" it may be in itself. "We shall be pleased by its very vulgarity. . . . The treasures of the memory have been melted and dissolved, and are now gilding the object that supplants them; they are giving this object expression."[9] The glamor of this spectacle is then derived from something alien to the immediate stimulus of, say, brown uplands and ancient dwellings. If in others days I had not been happy amid these scenes—this particular animal I—then I should not now find it lovely. The same sensory material, with the same massing and focussing of color, might conceivably have left me cold. The beauty here embodied is the specific beauty of expression or association. As this is an illustration of beauty derived from expressive interest only, so cases may be imagined in which beauty is dependent on form and matter alone without the reinforcement of congenial imported significance. Expression may be absent from beauty as well as constitute its total presence and intent. An example would be a decorative inscription on a Saracenic monument as one who did not read Arabic might be aware of it.[10] Here the charm may consist wholly of rhythms of curve and color. The sound of Italian verse striking on the ear of a sensitive person who did not understand Italian would be a further example.

Beside cases in which one of the elements of beauty functions for the time being as the whole, Santayana gives instances in which, through looseness of structure, the sensuous and expressive content are, though both present, readily separable. This strengthens with fresh material the argument for the logically independent

[9] *Ibid.*, pp. 194, 195.
[10] *Loc. cit.*

status of expression, and the presumption of the essentially fortuitous relation between expression and images. In stained glass, for instance, we have a "gorgeous and unmeaning ornament" which then "becomes a vivid symbol." [11] There exists for the sensibilities an expanse of rich color with "a look perfectly natural . . . a complete virginity of face, uncontaminated with the smallest symptom of meaning," to which, as a surplusage and like an afterthought, meaning may be added.

The independence of the expressive from the presentative element may even go so far, on Santayana's view, as to reach hostility. In tragedy, for instance, the effect of sublimity which is proper to that form of art depends on the capacity of an agreeable external show to conquer a horrible content. Here the two elements point in different directions; they only join after conflict. The tragic emotion is complex; it contains two contrary forces, for in this particular affective conscious process an element of pleasure must triumph over an element of pain. We must be at once saddened by the truth of the plot and delighted by the vehicle that conveys it to us. "A striking proof of the compound nature of tragic effects," he says, "can be given by a simple experiment. Remove from any drama—say from Othello—the charm of the medium of presentation; reduce the tragedy to a mere account of the facts and of the words spoken, such as our newspapers almost daily contain; and the tragic dignity and beauty is entirely lost. Nothing remains but a disheartening item of human folly, which may still excite curiosity, but which will rather defile than purify the mind that considers it." [12]

Without at this point prejudicing the issue of our argument, we may yet indicate for purposes of clarification that in any æsthetics of expression, conventionally so-called, this crucial experiment would be regarded as a monstrous proposal and as the *reductio ad absurdum* of the method that allowed it. Many philosophers would say that the supposition that you can abstract the medium from a work of art and have a recognizable part of it left is insecurely founded on mistaken theory. It would not be the

[11] *Op. cit.*, p. 76.
[12] *Ibid.*, p. 226.

story of Shakspere's Othello, or any component of it, so the argument would run, that would be left after the removal of Shakspere's verse and architecture; it might be—who knows?—such a scrap or theme as incited Shakspere to bring Othello into being, story and medium alike. But as in the finished play there are medium and plot which can no more be torn apart than the life of the blood from its substance in a breathing animal, so in the original slight hint that sets in motion the mind that makes the play there are the analogous two aspects. The true distinction, would be the claim, is not between a mass of sensuous imagery and its associated value, but between a slight form which clothes a slight meaning and a highly determinate form which clothes a highly individual meaning. In Croce's famous words: "Be it pictorial, or verbal, or musical, or in whatever other form it appear, to no intuition can expression in one of its forms be wanting; it is, in fact, an inseparable part of intuition. How can we really possess an intuition of a geometrical figure, unless we possess so accurate an image of it as to be able to trace it immediately upon paper or on the blackboard? How can we really have an intuition of the contour of a region, for example, of the island of Sicily, if we are not able to draw it as it is in all its meanderings? Every one can experience the internal illumination which follows upon his success in formulating to himself his impressions and feelings, but only so far as he is able to formulate them. Feelings or impressions, then, pass by means of words from the obscure region of the soul into the clarity of the contemplative spirit. It is impossible to distinguish intuition from expression in this cognitive process. The one appears with the other at the same instant, because they are not two, but one." [13]

In his conception of æsthetic expression, then, Santayana not

[13] *Æsthetic*, pp. 8, 9. Santayana says that he reverses the common usage of terms in making expression the thought, and the word, the datum. He calls the common usage "curious" and "unpsychological." "People call the words the expression of the thought: whereas, for the observer, the hearer (and generally for the speaker, too) the words are the datum and the thought is their expressiveness—that which they suggest" (*Sense of Beauty*, p. 205, note). But that his divergence from the common usage is a much more complex matter than the word 'reversal' would indicate, it is part of the purpose of this paper to show.

only limits the term to a part of the æsthetic effect instead of expanding it into the whole, but assigns to this part a relatively high degree of self-sufficiency. We have seen that the plot of a tragedy is for him a constituent unmodified in its objective status by its way of appearing. A modification takes place surely, he would say, when a commonplace story acquires noble poetry for its vehicle; but the modification takes place in the individual consciousness of the observer, not in the substantial fact of the drama. The repellent quality of the tale is compensated for by the shine and artistry of the medium; but the tragic events are not themselves transfigured. Upon the view opposed to Santayana's this whole assumption of the separability of percipience and substantial fact in art is unwarranted. The story as finally expressed in the words of a master must be thought of as a new creation, not as the simple text which might have occasioned the act of creation.

But for a fair portrait of Santayana's theory his doctrine of the unity of artistic effect must be juxtaposed to his doctrine of the separability of functions. The two ideas cohabit, though they do not cohere. In his anatomy of æsthetic pleasure he confesses that he has done something that is dangerous and in a sense unsanctioned by the plain facts. In treating objectified feeling as if it were composed of parts, in distinguishing the material of things from the forms it may assume, and these from their associated value, he has followed, he says, "the established method of psychology, the only one by which it is possible to analyze the mind. . . . But æsthetic feeling itself has no parts, and this physiology of its causes is not a description of its proper nature."[14] Since Santayana himself recognizes the precariousness—even the measure of falsification—of his analytical procedure, his own words furnish the stimulus for a critical consideration of his method and the inquiry as to whether any other approach to the æsthetic concept of expression may be less hazardous.

The central fact in Santayana's method for the critic is that in "following the established method of psychology, the only one by which it is possible to analyze the mind," he avails himself exclusively of the tool of history for the purpose of differentiation.

[14] *Op. cit.*, p. 267.

"Expression," he says, ". . . differs from material or formal value only . . . in its origin." Physiologically and psychologically they are fused. "But an observer, looking at the mind historically, sees in the one case the survival of an experience, in the other the reaction of an innate disposition."[15] All three modes of beauty are blended in the act of æsthetic contemplation. But since the mediate value of beauty was—to borrow Alexander's terms—begotten by the temporal process upon space at a point-instant different from the moment of arrival of the immediate values, the two types may be treated as separate functions. The cause of associated meaning happened in creation's career before the cause of pleasant sound and pattern. Our writer's method then is to explain beauty by tracing the evolution of a content of experience, reporting how a particular complex has been built up out of elements through the operation of specific mechanisms. He conceives his task as an æsthetician to be the telling how charm and grace have been created, pieced together, erected. He focuses his search upon the primitive seeds and natural instrumentalities which in course of time conjoin to produce that arresting result—beauty. Being empirical-historical, his method will be observational rather than interpretative and linear rather than systematic. The reality of the temporal process and the validity of the function of sense-perception will be assumed. In the course of the chronicle there will be no inference to an element or force at work in the process which is not verifiable by reference to the ranging eye. The psychological reporter does not presume to guess what moves the world to individualize itself thus and so, but writes it off merely as it is given. "Here is an epic process, behold it," he seems to say. "Why it exists I do not know; but if it interests you, its course appears to be as I say." Any hypothesis of a *primum mobile* or a transcendent power, an immanent teleology or a soul or a pervasive divinity, is a gratuitous assumption outside the program of a scientific philosopher.

At first sight it would seem as if nothing could touch a description of this sort so long as it remained consistently untheoretical. A bare record of events is not a thesis to be supported or chal-

[15] *Ibid.*, p. 195.

lenged. The disavowal of any intention of interpreting or adumbrating or divining ought, it would seem, to disarm the critic. But the ideal of a perfectly transparent report in the field of philosophy is a vain hope, and the notion of a detached observer who does not shape his history to the requirements of some assumption is a pretty fiction. 'Essences' which are merely 'intuited' and which are innocent of relevance, congruity, concept, or category, can only be conceived of by a violent effort of abstraction; and the 'facts' which a scientific æsthetics would recount actually swim in a context of opinion or conviction or supposition and cannot live and breathe outside their essential medium. So, in Santayana's case, the mere effort after transparency, the mere will to take events in the cosmic evolution as flat data, leads him, paradoxically enough, to an inclusive mental set. While explicitly intending abstinence from speculation, and while trying to report only what he has honestly seen with his eyes and heard with his ears, he ends by coloring his report with the prejudicial hue of fortuitousness. For chance is appealed to in his story, not provisionally and humanly, but finally and cosmically. There is thus a presumption of the accidental in his representation, and a postulate at the basis of his psychological æsthetics.

If anyone then undertakes to examine Santayana's transcript of reality in so far as it concerns the appearance of artistic species he will be struck by the frequency with which the category of sheer luck is invoked. A naturalistic philosopher, he tells us in his essay on Lucretius, substitutes law for fortune. But in his own naturalistic philosophy miracles and mysteries abound. The verbs by which he describes the arrival of new qualities in the world of art express accidental change rather than reasonable progression. For instance, this is his description of the emergence of beauty in human experience: "The ceaseless experimentation and ferment of ideas, in breeding what it had a propensity to breed, came sometimes on figments that gave it delightful pause; these beauties were the first knowledges and these arrests the first hints of real and useful things."[16] He here speaks of humanity "coming on" delight as we speak of the luck of sunny weather

[16] *The Life of Reason. Reason in Art*, p. 16.

for a holiday. In describing the origin of dancing Santayana says that groping action passed into significant and disciplined performance by a "quite intelligible transition." Yet in stating this intelligible transition he asserts that conduct in the groping stage "lights on" its purpose.[17] In discussing the beginnings of music, our author considers the problem why a "pattering of sounds on the ear" should have as much moment "as any animal triumph" or "any moral drama." He says: "That the way in which idle sounds run together should matter so much is a mystery of the same order as the spirit's concern to keep a particular body alive or to propagate its life. Such an interest is, from an absolute point of view, wholly gratuitous. . . . We happen to breathe, and on that account are interested in breathing; and it is no greater marvel that, happening to be subject to intricate musical sensations, we should be in earnest about these too."[18] Apparently the basis of rationality on this view is the accident of a happy physiological organization. The account of the dawn of decorative art involves the same reference to fortuitous variation: "If (a man) happens, by a twist of the hand, to turn a flowering branch into a wreath, thereby making it more interesting, he will have discovered a decorative art and initiated himself auspiciously into the practice of it."[19]

There is a sense in which Santayana confines himself to the end to the principle of chance—if one may use so paradoxical an expression. For he assigns to that human faculty of judgment which turns back upon the train of existence, and endows it with import and value and beauty, only that same authority of spontaneous emergence which he gives to all other existences. Every impulse has initially the same authority as the censorious one by which the others are judged.[20] Yet to judge just means to apportion authority. How then can that which is without prerogative authority confer weight upon others? This perhaps is hardly Santayana's business to explain, since he is probably no more bound to justify justification than anything else. In the spirit of

[17] *Ibid.*, p. 41.
[18] *Ibid.*, pp. 45, 46.
[19] *Ibid.*, pp. 118, 119.
[20] *Ibid.*, p. 169.

his system he might contend that the capacity of human reflection and art to enrich bare existence with relevance and harmony is a datum; that all the intellectual and æsthetic properties which are the outstanding attributes of the human world simply 'turn up.' Events so conspire, one might say, that reason attaches value to the blind impulse and the unprized apparition. Man "introduces consonances into nature" and so sustains what he doesn't originate. Life, we are assured, no matter how complex it may become is at bottom pure feeling; yet this feeling may rise to such dignity that it is appropriate to say that it disciplines, orders, arranges, and rationalizes other and simpler forms of itself. Mental vegetation may so thrive and thicken that it may "gather and render back its impressions in a synthetic and ideal form."[21] Fitful nervous groping may so prosper that it can create symbols. Music starts with "explosive forces" that "loosen the voice," but these automatisms in course of time secure propitious retroactive effects, and presently a force is engendered which reins in and keeps from becoming vagrant the original sense-impressions. A capacity is generated which can control, reflect, and criticize, and which can develop style and taste. Human wisdom and power are, as respects origin, sediment of the flux of nature; but this sediment is unexpectedly precious and potent, for it proves to be able to fortify certain currents in the flux and cancel others.

Of course no one can disprove, in the mathematical sense, this report of the emergence of forms of art and qualities of being. On the whole the panorama presented corresponds with our inspection of the surface of cosmic history. And yet for a view that is designed to exhibit the hang of things—their connections and interrelations and significances—it leaves the reader with a curiously strong sense of disorganization and of appeal to the marvellous. The presentation seems alienated from its purport. Causes seem absurdly small in comparison with their effects. The accident of twisting a spray grounds, we are told, the superstructure of a decorative art. This announcement strains one's sense of credulity. An unmotived leap from chance gesture to self-conscious and complex world of beauty may have occurred in

[21] *Op. cit.*, p. 39.

nature; but the apprehending intelligence finds it stranger that this should have been so than that it should not. Adequate cause for considerable effect is surely a postulate of all explanation. That the fortunate collision of pattering sounds with plastic sensorium should have engendered the intricate intellectual art of musical composition seems more like a guess calling for explanation than an explanation in itself. If indeed such a collocation of events is left at its face value and not further analyzed, it implies the unscientific notion, *ex nihilo multum fit*. Such value and import as natural events appear to the unsophisticated mind to carry bodily with them are, according to Santayana, imposed upon the events after the events by an effect of themselves. And in this the wonder lies: that out of the chance motions and clashings of primordial physical elements should issue massive spiritual capacities and centers of appreciation. We feel that the matrix can hardly sustain the offspring.

Such an ironical result is not out of harmony with the general tenor of Santayana's whole 'scepticism and animal faith.' The demand for logical intelligibility is in itself, to his mind, irrational. "The reason for my proclivity to play with ideas, to lose them and catch them, and pride myself on my ability to keep them circling without confusion in the air, is a vital reason. This logic is a fly-wheel in my puffing-engine; it is not logic at all." [22] Or if logic is not a fly-wheel in a puffing engine it is a "mere romance." [23] Certitude appertains only to the airy realm of essences, that is to merely presented contents untroubled by value or meaning; value and meaning are what arbitrary belief or interpretation adds by animal impulse. There is no such thing in reality as genuine logical constraint; on the contrary, the "real knowledge" which binds two things together is transitive and presumptive only; it is faith. It extends the jurisdiction of the mind from one thing to something alien, because its essential character is to mediate between two things which do not in their own right cohere. The ideal of rationality does not express a law of things

[22] *Scepticism and Animal Faith*, p. 121.
[23] *Ibid.*, p. 101.

but the accident of a creature's organization. "All theory is a subjective form given to an indeterminate material." [24]

In a theory which interprets rationality as a late and episodic birth of time and as a merely subjective phenomenon, it is not surprising to find that the ground and truest explanation of things is physical. "All origins lie in the realm of matter, even when the being that is so generated is immaterial, because this creation or intrusion of the immaterial follows on material occasions and at the promptings of circumstance." [25] In his concern not to "cut the animal traces" of spirit, Santayana almost leans backward and makes man effectively and for intelligence a biological subject, a kind of gifted brute. Life is for him an equilibrium of physical forces; the self a cycle of vegetative processes; the ideal an emanation from the natural. Plastic art is really motor sensation. Spiritual facts are ultimately cerebral events. Space is the final category of intelligence. Specific values attributed to objects, such as colors and odors, are due to specific nervous processes. Inference is a feeling of relation. The love of nature is an overflow of sexual passion. Our impressions of the sublimity of the stars and of the Categorical Imperative are sensations of physical tension.

Santayana almost boasts indeed that he is a materialist. He would have the glory of being the only one alive. As, however, he immediately qualifies his boast by saying that he is not a metaphysical materialist, he takes the bloom from its cheek. If he means no more by the title than his willingness, "whatever matter be, to call it matter boldly," [26] I scarcely see how he is to maintain his title against the most flouted idealist. For it is characteristic of the idealists to say with one of their leaders: "To reject the function of the body—our own and nature's—is not to honor but to bereave the spirit;" [27] and with another: "Artistic fancy is always corporeal." [28] And yet there is truth in our

[24] *Reason in Art*, p. 128.

[25] *Scepticism*, p. 109.

[26] *Ibid.*, pp. vii, viii.

[27] "Croce's Æsthetic," by Bernard Bosanquet, *Proceedings of the British Academy*, IX, p. 12.

[28] *Breviary of Æsthetic*, by Benedetto Croce (trans. Ainslie), p. 263.

author's boast. He not only assigns to matter validity, but primary validity; he not only attributes to it existence, but abstract existence. Other qualities of being come back to it as to a final resting-place; it is for him a latter-day first cause. For as we have seen, his method of understanding reality, at least artistic reality, is historical. The one sound analytical procedure was to spread functions and entities out in the order of their genesis. By this mode of analysis matter is primary; and mind, coming later, has to be superimposed on matter by an anterior operation. And the synthesis of the two seems more like a *mariage de convenance* than a union through affinity of nature and disposition.

There is then an immediate datum both in the history of the universe and in the æsthetic experience, and in neither case does the presentation carry its own intelligibility with it. Santayana's specific doctrine of the connection of presentation and expression in art by the fortuitous link of association is simply his whole system writ small. As in reality in the gross the psyche has to create spirit to bring into the cosmic process meaning and value, so in the æsthetic experience, the immediate imaginal content is forced to suggest for itself a logically alien import.

The alternative view is to take matter not as something which in its pure concept excludes mind, but as what it is understood to be, and sensation and fancy not as immediate data but as utterances. If the meaning of presentations may be taken as inherent in them instead of as "an ideal harness loosely flung over things," then the articulate grammar of both æsthetics and philosophy in general becomes less miraculous. For a speculative philosopher there is no problem in the 'compresence' of matter and spirit in the universe, soul and body in a biological organism, expression and matter and form in the sense of beauty, because in each of these cases essential coherence is taken as a birth-right. The so-called ideality of matter means for many idealists no more than that matter possesses a nature or intelligible character, this being an attribute over and above the capacity to stimulate an organism. Such philosophers find it rationalistic rather than observational to make matter originally and lumpishly physical and to exhaust the definition of 'things' in their relation to the sensorium.

Since they believe that colors and sounds and fragrances speak a language in the very act of setting up nervous currents, they find it artificial to attach "associated value" to æsthetic presentation *post factum*. Beauty's expression is its nature. The thought of poetry, in poetry, is the music; sense and sound are a single compound life. Even in the test-case of elemental sensations—the splendor of red or yellow, the burst of a trumpet or the piercing tone of a violin—the sensation is felt by the human percipient not as sheer impact of ether-waves, but as utterance, that is, expression. Colors say something to us, though what they say cannot be translated into terms of ordinary discourse. If then expression is maintained to be innate in so-called pure sensation, by so much the more will it be innate in those examples of art which are more palpably representative or symbolical.

There is then nothing esoteric about a doctrine of æsthetic expression which holds that the ideality of art rests on a faith in the life and divinity with which the external world is informed, or that art adumbrates the divine attributes of nature. Such phrases as these, set in their complete context, imply the simple truth that art presupposes an import or expressiveness in all its objects, even the barest of them—moreover, an expressiveness which is not appended to the presentation. Thus Santayana's remark that "there is no explanation in calling beauty an adumbration of divine attributes"[29] loses its sting. He has been misled by the figurative and enthusiastic language, and supposes there is vagueness because there is lofty metaphor. The truth of the matter would seem to be that there is more mystery in an æsthetic which simply allows beauty to graft itself on to data after the event than in one which holds that there is expressiveness and therefore beauty in sensation from its earliest dawn.

If proof were needed that the expressionism of the expressionists is a natural interpretation of artistic phenomena, such proof would seem to be at hand in Santayana's own naturalistic æsthetics. Though he affects a scientific attitude, and would gladly let all happen as happen will in a universe primarily composed of matter and moved by chance, he is at times decoyed by his imaginative

[29] *Sense of Beauty*, p. 8.

gift into greater precision of perception. Witness his account of the "full vitality and music" of Lucretius' world. "We seem to be reading not the poetry of a poet about things, but the poetry of things themselves. That things have their poetry, not because of what we make them symbols of, but because of their own movement and life, is what Lucretius proves once for all to mankind. . . . Naturalism is a philosophy of observation, and of an observation that extends the observable; all the sights and sounds of nature enter into it, and lend it their directness, pungency, and coercive stress. At the same time, naturalism is an intellectual philosophy; it divines substance behind appearance, continuity behind change, law behind fortune. It therefore attaches all those sights and sounds to a hidden background that connects and explains them. So understood, nature has depth as well as surface, force and necessity, as well as sensuous variety."[30] It would seem from this that a natural philosopher divines directly the 'expressiveness' of nature. And all the "divine attributes" that a Platonist or Hegelian might desire are implicit in what this Lucretian acknowledges that he divines. The poetry of things themselves is the expressiveness of things themselves. If Santayana had followed the Lucretian argument whithersoever it would lead and had boldly ascribed movement and life to nature in requisite measure at all stages of her process, the difference between his interpretation and that of at least one critic would vanish.

KATHERINE GILBERT.

THE UNIVERSITY OF NORTH CAROLINA.

[30] *Three Philosophical Poets*, pp. 34, 35.

THE PROBLEM OF TIME IN SCIENCE AND PHILOSOPHY.

I.

ONE generally acceptable conclusion which may be drawn from the discussions of contemporary thinkers is that the question of what kind of a universe we are living in is intimately connected with the problems of time. Whether or not this conclusion is taken as an indication of progress in philosophy depends upon which of two positions it is held to confirm. In the first case a spirit of despondency concerning the value of intellectual analysis may be fostered by the reduction of the problems of speculative thought to some phase of the time problem; for time, it is held by some, appears to be one of those realities which baffle us in direct proportion to the amount of thought we focus upon them.

Not only have such questions as to whether the universe is infinite in duration ('eternal'), or whether it had a beginning in time and may have an end in the remote future (Kant's antinomies), puzzled everyone who has wondered about these matters, but even such persistent and systematic thinkers as scientists and philosophers are still mystified by the riddles of time and change. Indeed, one might argue that Zeno's paradoxes of motion constituted the coming-of-age of philosophy. And this view that time and change are illusory did not pass away with the Eleatics. Among modern thinkers J. E. McTaggart has argued for the unreality of time by trying to show that every event is past, present and future. This view of change also appears in the philosophy of F. H. Bradley, who, like Plato, sees in change a mark of imperfection. The devotees of *Einsteinismus* have also called attention to the fact that motion, and hence change, is relative. And it is but one step from the view that time and change are relative to the view that they are self-contradictory notions. Whether this be true or not, the most cursory analysis will reveal the fact, which Mr. C. D. Broad brings out clearly in his *Scientific*

Thought, that there are a number of distinct meanings of the term 'change.'

The suspicion is growing that even our systems of scientific thought are, at best, only conventionalized patterns of adjustment to the external world, and that this objective order may not for long tolerate these 'laws' which we, with our utilitarian needs, have 'plastered on' to nature. It will be remembered that it was a favorite idea of H. Poincaré's that the axioms of geometry and the principles of mechanics are not 'true,' but only 'convenient.' This position is also taken by Mr. A. S. Eddington, who doubts whether any of our laws of nature (except, perhaps, that of atomicity of action) really inhere in the external world. This pessimism concerning the validity of scientific principles may be used to lend support to the position of those who, like the pragmatists, deny the possibility of a metaphysics of nature. And, in truth, if we can not understand such a universal and common phenomenon as time what hope is there of comprehending that vast evolutionary order of events which, as we say, is 'in' time?

The second, and to me more tough-minded response, is to regard this convergence of the varied problems of philosophy upon the meaning of time as increasing the possibility of understanding nature. This becomes possible through a closer scrutiny of this central and ubiquitous reality, the temporal order. If it be true that many of the problems of science and philosophy center around the question of the relation of time, change and motion to that which is held to be the permanent, immutable and invariant reality (or realities) of nature, it is evident that the prelude to any adequate concept of nature is a clear comprehension of the ramifications of the problems of time. I shall first of all state what these problems are. Then I shall propose an hypothesis to provide possible answers to these problems.

II.

Time and Causation.—Two of the commonest notions in our thinking about the external world are the ideas of *cause* and *effect.* These notions are closely connected with the concept of

time. It is the popular belief that the so-called cause must precede the so-called effect. It is also an accepted dictum of science that there is no more in the effect than there was in the cause. However, in order to reduce to a minimum the qualitative novelties which emerge in the processes of change, the scientist is forced to try to eliminate the temporal interval between cause and effect. He accomplishes this by stating the laws of sequence in differential equations, and causation accordingly becomes functional dependence. Positivists like Karl Pearson, and, more recently Bertrand Russell, tend to adopt this view of causation as dependent variability. To the extent that the time element can be eliminated from the equations of physical science the commonsense notion that the cause precedes the effect is undermined. This is the ideal at which the scientist aims. But he has not as yet realized this ideal, for, as Maximillien Winter[1] has shown, there are still many cases in which 'heredity' (*i.e.*, past history) plays a rôle in mechanics. This same view is expressed by Hermann Weyl[2] when he states that the idea of causation, in contradistinction to functional relationships, is intimately bound up with the unique direction of progress in time, namely Past→Future.

We know that in such a view, in which time does not count, the creative aspect of nature, which is identical with the movement wherein the past 'gnaws' into the future, is being ignored. Since the advent of Bergsonism it has become customary to assert that a mechanical universe is one in which time does not count because time, in physical science, plays the rôle of an *independent variable.* A strictly mechanical universe is one in which the processes can be reversed. All that can happen is the redistribution of mass particles in space. In other words, time is spatialized. This follows inevitably, it is generally believed, from the treatment which time receives in the equations of motion of a system.

Now it is true that the spatial coördinates of a system are ordinarily treated as the dependent variables, while time is considered as the independent variable. This is the case, for example, in differential equations where the second derivative is acceleration.

[1] "Time and Hereditary Mechanics," *Monist*, Vol. 35, pp. 70–80.

[2] *Space-Time-Matter*, Eng. trans., p. 310.

But in general the situation is not quite so simple. Even physical time has no single and unambiguous meaning. For there are also many equations in physics in which time functions as the dependent variable, and yet there is a sense in which time can not be made dependent. We can not control time, but can only make the best use of it. Time has been said to be the direction in which we are all going without effort and without exemption. From this point of view, Dean W. R. Inge has raised the question of whether the time series is reversible. Certainly in the universe in which we live it is not.

In the theory of relativity the ideal simplification of nature is carried to its highest state of perfection. In this physical doctrine space coördinates are tied up with time in one equation. Here any one coördinate could be said to depend on the other three. Analytically, such equations are dealt with in the same way as are those of three dimensions. Under such conditions it is hard to state which is the independent variable and which the dependent. Time seems here to be turned into space merely by giving it a minus sign. This clearly shows that it is not so easy to state just what time really *does* mean in physics, and hence to say that it must necessarily function as an independent variable is inaccurate. Whether, in the last analysis, the Newtonian conception of an absolute and evenly flowing time must be reintroduced into relativity theory, in the form perhaps of the velocity of light, and whether 'simultaneity' can be given an absolute meaning, are matters which the physicists have been unable to decide.

At all events, philosophers who respect the richness of content of the actual universe will not be inclined to accept the mathematical abstractions of the four dimensional space-time manifold as a fair exchange for the creative novelties of the perceptual world. A universe in which time did not count would be a dull universe indeed, for our joy in life depends upon the element of unpredictability in experience. History, and not mathematics, has the last word in the empirical sciences. To regard time (duration) as a fourth dimension (a 'phantom') of space is not in accord with the facts of evolution. Thus far, then, we must agree with Bergson when, in his *Durée et simultanéité,* he insists

that we must distinguish between time as *experienced* and time as *measured*.

III.

The Perception of Time.—Not only is the temporal sequence of nature the most puzzling reality in the external world; it is also the most astounding thing in man himself. Like the problem of space perception, the problem of the perception of time remains one of the old, and ever-new, riddles of psychology. In the days when the reality of sensations was unquestioned it was a simple matter to build up the notion of time by combining the two ideas of the qualities of sensations, in this case that of 'protensity,' 'voluminousness,' or 'duration,' with the belief in the compounding of mental elements ('mental chemistry'). But now that structuralism in psychology, along with sensationalism, is being abandoned, there is a tendency on the part of the adherents of *Gestalt*-psychology to look upon 'temporal patterns' as wholes not analyzable into simpler elements.

While the two principal views of space perception, the 'empiristic' theory and the 'nativistic' doctrine, are also to be found in theories of time perception, it is generally held, as Professor W. B. Pillsbury says, that "much less is known definitely of the perception of time than of the perception of space."[3] This seems all the more mysterious because of the fact that "time is much simpler than space and has fewer components." Perhaps the problem of time perception is more difficult than that of space perception for the reason that there is no known sense organ for the perception of time, whereas space perception can be more definitely localized; *i.e.*, visual space perception might be considered as localized in the thalamus, occipital cortex, etc. (The behaviorists are to be commended for insisting that space perception of *depth* is a conditioned reflex involving a synthesis of visual, motor and tactual space.) The natural assumption would be that if there is any physiological organ for time perception each sense organ ought to be its own time-clock. In addition to this Julius Pikler[4] believes that just as there is a common organ for consci-

[3] *The Essentials of Psychology*, 1922, p. 190.

[4] *Sinnesphysiologische Untersuchungen*, Leipzig, 1917, pp. 485–495.

ousness, so there must be one sense organ (*Zeitempfindungsorgan*) for the perception of time.

The sense of time is bound up with the idea of sequence, the irreversible series which enables us to recognize and place events as 'before' and 'after.' This unidirectional character of time is exhibited in our processes of chord resolution in melodic or harmonic progressions. In plain words, playing a phonograph record backwards takes the meaning out of it. This is the main fact of normal temporal perception to be explained. But there are certain abnormal conditions which must also be accounted for. The great accuracy of time perception as shown in post-hypnotic suggestion indicates that the internal time-piece may be as reliable as any clock. What is the origin of this remarkable time sense?

Psychologists are debating this matter. It has been supposed by some that the physiological rhythms, such as heart beat, respiration, or rhythm of nervous discharge, enable one to count time. In the case of post-hypnotic suggestion we are asked by some students to suppose that the subconscious mind has done the counting. The fact that 'filled' time (*i.e.*, time during which we are interested in some series of objective events) should be short in passing but long in memory, whereas 'empty' time is long in passing but short in memory, suggests that time is here discriminated in terms of bodily tensions and relaxations, and that consciousness of muscular sensations (*kinæsthetic* imagery) plays the predominant rôle. But it is not so easy to see how this explanation clarifies certain pathological phenomena. Patients suffering from psychosis may give their age as that at which they entered the asylum. They may lose the sense of time passage. But it is also possible for a person to lose reproductive memory and yet retain the time sense for present events. Again, as James tells us, in hashish-intoxication there is an apparent increase in time-perspective. We utter a sentence and before the end is reached the beginning seems already to date from indefinitely long ago. My own guess would be that in this case there is an alteration of cerebral metabolism, somewhat similar to that in oxygen deprivation. The general explanation which William James [5] offers takes

[5] *The Principles of Psychology*, Vol. I, Ch. XV.

its departure from the fact of the 'specious present' of the organism. As he says, the practically cognized present is no knife edge, but a saddle-back, on which we are perched, and from which we look into the two dimensions of time. The number of units which can be brought under one act of consciousness (span of attention) depends upon the grouping of the units. According to James twelve seconds constitutes the maximum filled duration (*e.g.*, 40 strokes in a rhythmical grouping of sounds composed of 5 sub-groups of 8 units). This grouping is possible because knowledge of the adjacent parts of the 'stream of consciousness,' past or future, near or remote, is always mixed up with a knowledge of the present.

The intuition of duration, which James pictures as fairly constant for each passing instant of consciousness, must be correlated with some fairly constant feature in the brain-processes to which consciousness is tied. This brain process James finds analogous to the phenomenon of 'summation of stimuli' and after-images. In neural terms there is at every moment a cumulation of brain processes overlapping each other, of which the fainter ones are the dying phases of processes which but shortly previous were active to a maximal degree. The amount of overlapping determines the feeling of duration occupied. What events shall appear to occupy the duration depends upon just what the overlapping processes are.

Idealists, however, are not inclined to accept James's version of the unity of the self as the unity of the passing thought. Mental life, they seem to hold, exhibits the sort of thing which Bergson calls 'interpenetration,' which can not be explained by such metaphors as 'overlapping.' But can the idealists really offer a better theory? Kant struggled with this problem of passing from a succession of perceptions to a perception of successions. He solved the problem by creating the transcendental ego; but, after all, was not this only a name for Kant's ignorance? And James admits the deficiencies of his explanation when he confesses: "Why such an intuition should result from such a combination of brain-processes I do not pretend to say."

Moreover, James does not indicate how he would explain the irreversibility of subjective time. We know, however, that

the chemical changes in the various cells of the body are irreversible, in the sense that the original condition can not be restored after a natural process. Is it not a fair inference, then, to suppose that the unidirectional character of experienced time arises from the irreversible series of chemical reactions which is the physiological condition of consciousness? Will this doctrine adequately explain the facts? Idealists would say no. Their dissatisfaction with this explanation would rest upon the conviction that the logical processes by means of which a science of chemistry is created are just as fundamental as the chemical processes which are conceived to be the physiological condition of thought. In other words, the concepts of chemistry are the products of thought, and to say that the thing which makes a science of chemistry possible is itself the product of chemical reactions is assuming a theory which could only be justified by extended argument. This raises the whole thorny question of the problem of knowledge.

IV.

The Relation of Psychical Time to Physical Motion.—The ideas of motion and causality, as we have seen, are closely connected with the notion of irreversibility and the asymmetry of time. Those thinkers who have proposed that subjective time is but an echo of objective time, developed through a process of evolutionary adaptation, as Herbert Spencer supposed, are overlooking the possibility that time is the presupposition of all phenomena and experience. Scientists who turn philosophers are especially liable to disregard the epistemological foundations necessary to a system of scientific thought.

In searching for a set of postulates to form the logical basis of his behavioristic system of psychology Professor A. P. Weiss[6] selects *movement* as the simplest and most universal reality. Movement possesses the added advantage of having the widest range of permutations, such as *rate, direction,* etc. I have no desire to indulge in logical quibbling, but it does seem to me that, in addition to the set of postulates already formulated by Dr. Weiss, another postulate, covering the relation of the logical con-

[6] "Behaviorism and Behavior," *Psychological Review,* 1924, Vol. 31.

cepts and categories of the 'thinking behaviorist' (to use a qualification which Mr. Lovejoy has created) to the underlying realities of his physical monism, is required. The fact that motion, conceptual, if not physical, possesses rate and direction because we endow it with them indicates the extent to which the conceptual element enters into the categories of science.

Now the general procedure of science consists in defining certain *primary magnitudes,* such as length, mass and time, in accordance with the centimeter-gram-second system of units, and then building up the many *derived magnitudes* of the higher sciences out of the primary units. The belief is prevalent that since the phenomena quantitatively expressed in terms of the derived magnitudes (the behavior of protoplasm, for example) can be analyzed into the simpler units of the primary magnitudes, therefore the data of the higher sciences (biology, psychology, etc.) are less real than the realities of physical science. But this is not so. The arbitrary character of the units and dimensions which are used in the quantitative statements of science is brought out by Mr. Norman R. Campbell in his book on *Physics, The Elements* (Part II, Chapters X, XIV, XV). Both derived and fundamental magnitudes contain an arbitrary element connected with the choice of the unit. Mass, length and time, Professor Campbell points out, are not necessarily basic magnitudes, but such special features as they possess are derived partly from the dynamic equations in which they occur, and the high accuracy with which weights and lengths (but not times) may be compared.

In his *The Mathematical Theory of Relativity* Professor Eddington also shows how the consequence of the theory of relativity has been to throw in doubt the postulates implied in the naïve assumption that length, work, potential, etc., are objectively measurable and invariant existents. This is in line with Poincaré's assertion that mass is a constant which it has been found convenient to introduce into equations. Physical quantities are not properties of the external objects alone, but are relations between these objects and the particular frame of motion from which they are measured.

The behaviorists need to be reminded, then, that in spite of its

assumed simplicity, movement is one of the most complicated facts of nature. Mathematically it involves a correlation of a dense series of points in space with an asymmetrical order of instants in time. Psychologically the problem is even more difficult. We know that motion is an amalgamation of the spatial and the temporal orders. Is time a derivative notion, an abstraction arrived at through the perception of motion? Or does the concept of motion depend upon an innate and unique recognition of temporal passage? James holds that we can not intuit an extension in time without sensible content. This seems to eliminate the second alternative. But have we progressed very far beyond the nativist theory when we endow sensations with an irreducible 'voluminousness'? On the other hand, as Professor Bentley[7] tells us, to say that the perception of motion is native to the organism is, in the sight of most psychologists, abandoning the problem as inscrutable. Professor Bentley solves the mystery of the perception of movement by bringing it under his general principle of coalescent integration. Successive trains of stimuli undergo temporal ligation by being incorporated into a 'movement complex.' But this theory of coalescent integration strikingly reminds one of Wundt's theory of space perception as a *creative synthesis*. And as Professor E. B. Titchener[8] has said, this is really leaving us with a miracle on our hands.

The present writer sees no difference in principle in assuming a nativist theory of time or a nativist theory of perception of movement. In either case we can only get back from the external world what we have already put into it. In the language of Kant, the idea of time is not of empirical origin, *i.e.*, it does not come through the senses, for it is the necessary *a priori* condition of all phenomena, internal or external. This is only saying that the prime fact of consciousness is the significance of time. What we need, I think, is an evolutionary epistemological monism. But before attempting to reconcile the nativistic and empirical theories of time perception by way of a theory of its genetic origin I wish to turn to certain inter-relations of time and evolutionary products.

[7] *The Field of Psychology*, pp. 137 and 233.
[8] *A Text-book of Psychology*, 1913, p. 338.

V.

Time and the Continuity of Evolution.—The physicist's conception of what the conduct of electrons ought to be has been rudely upset by certain revelations concerning the behavior of electrons inside atomic systems. In dealing with the relations which hold between atomic structure, and the radiant energy which is absorbed and emitted by revolving electrons in their atomic orbits, discontinuity of space and time seem to be implied. This discontinuity is openly embodied in Planck's quantum theory of energy and Bohr's postulate concerning the discrete series of states possible in atomic behavior. Various phenomena of this order suggest that the ordinary laws of classical mechanics are not applicable in the physics which deals with the interior of atoms. This, in itself, is disturbing, for such an absolute breach in nature is not acceptable to the human mind. But additional complications arise when the philosophical implications of this discontinuity are developed.

It is generally accepted that all ordinary processes of nature can be associated with the progress of an irreversible time order, which is related to the thermodynamic probability (*entropy*) of the system. Natural processes are irreversible because of the tendency of energy to become unavailable through heat radiation. Now if nature were entirely consistent at all times there would be no insuperable difficulty in understanding how man, whom most of us regard as a product of evolutionary forces, should have developed an intuitive consciousness of time which is of an irreversible order. But this genetic account of the origin of irreversibility of conscious processes implies, of course, that there must be continuity of evolution in natural processes. Therefore, when we come to the realm of atomic phenomena previously mentioned, where our ordinary notions, implying the continuity of space and time, break down, we discover that we are in the serious predicament of trying to explain facts which are really inexplicable. That is to say, we are confronted with a set of empirical facts which contain what seem to us to be irrational elements, for we find that our customary principles of causal relationship

no longer hold. Hence Professor Wm. S. Franklin's suggestion[9] that we abandon all notions of time when we enter the interior of the atom, *like action at a distance,* upsets our ordinary habits of thinking.

There are facts in astronomy (stellar evolution), physics (radioactive transformations, etc.), and chemistry (periodic table, atomic numbers, and isotopes), which indicate that inorganic evolution is just as real as organic evolution. But if we accept inorganic evolution of the physical elements as on a par with organic evolution we face additional problems, which may be summarized under several heads:

1. If, at bottom, nature is fundamentally irrational (not understandable), in the sense that she jumps from one set of laws to another, (which carries with it a corresponding discontinuity of spatio-temporal and causal relations), and then acts in accordance with new principles of behavior which can not be inferred from previous laws, how are we to explain the possibility of the inductive sciences, the successes of which rest upon the ability to predict what nature will do? And what justification have we for the belief that nature will 'obey' in the future the laws which she now follows?

2. If we give up the notion of causal relations as asymmetrical, and admit that the time order is relative, or can be reversed, are we not sacrificing the possibility of explanation in any ordinary sense of the term?

3. Whenever time does not enter into the behavior of physical elements must we not also surrender the idea of evolution, at least to the extent that atoms, if not molecules, have evolved from previous electron-proton conditions, and admit that the hydrogen and helium atoms and molecules are historically every bit as 'old' as the electrons and protons of which they are constituted?

4. What reply is the physical monist to make to those who, like Professor William McDougall, see in the discontinuities at the bottom of nature an excuse for the introduction of non-physical entities such as mind at the higher levels of nature? The usual objection to the procedure of introducing vitalistic discon-

[9] "The Quantum Puzzle and Time," *Science,* 1924, Vol. 31, pp. 258 ff.

tinuities appeals to the law of parsimony, but if we do not admit discontinuities in the higher sciences must we not also, to be consistent, deny the facts of quantum mechanics? And if we admit atomicity of action (discontinuity of space and time) at the lowest levels, what becomes of the principle of continuity (*natura non facit saltus*) and the law of parsimony in the biological sciences?

5. Finally, if the essence of a mechanical theory is that the system in question must be reversible, and if we conclude that brain processes are irreversible, does not this imply that it is impossible for the human intellect to conceive of a mechanical system? This question may revolve upon some ambiguity of the term 'reversible,' but the matter is worth discussing. I am content to point out that there are those (*vide* Eugenio Rignano's *Psychology of Reasoning*) who are prepared to argue that the supposition of the mechanist, that the universe is a meaningless or purposeless system, is really unthinkable.

In the foregoing discussion I have tried to make it clear that the problems of physics can not be solved independently of those of psychology and philosophy. It is equally evident that anyone who propounds a theory of psychic time must come to terms with the time of physical science. The only other recourse would be to throw overboard the doctrine of evolution, and to hold that psychic time is of no kin to the measured time of physics. This doctrine that both orders, the objective and the subjective time orders, are ultimate and irreducible, is presented by Ernst Cassirer.[10] But this is to create a rift between the physical and the psychical, leaving us with a philosophy of nature containing an inexpugnable dualism. In the faith that it is possible to develop a tenable theory of time in physical science, which will also carry us across what some conceive to be the gap separating mechanical behavior from purposive behavior, and which, finally, also provides an explanation of the origin of psychic time, the following suggestions are presented.

[10] *Substance and Function and the Einstein Theory of Relativity*, Eng. trans., p. 454.

VI.

A Theory of Time.—The ultimate reality of nature may be termed Matter-Space-Time. Space and time are abstractions from a fluent universe of changing contours of things. Cosmic space and time are real, but they are real as partial aspects of a changing stuff which gives them empirical content. Pure space and pure time, as such, do not exist. Here we depart from the view which Mr. S. Alexander has proposed in his *Space, Time and Deity;* but in other respects I am following the doctrine of emergent evolution.

There is an absolute order which we may regard, not as in time, but, rather, in which the changing universe perdures. Over and above the local times of existents in the universe there is a temporal order which flows along in an emerging series of events which is the tempo of the creative advance of nature. The time-system of any emergent in nature (what I prefer to call a *continuant,* to use Mr. W. E. Johnson's term) is a partial perspective of the total frame of Matter-Space-Time. Thus relations within this world-fabric are themselves spatio-temporal, though not necessarily material in a purely conceptual scheme. Mental time, therefore, is part of the same cosmic time as is physical time. As Mr. Alexander puts it, mind is a form of time, and not time a form of mind. The reason we can not communicate with the minds of the so-called inorganic elements is that, as Royce indicated, they have different time-spans or rhythms of duration. The human mind is not the cause of purposiveness in human behavior, but, to use Professor Woodbridge's words, it is an instance of teleology. The world is the expression of an eternally creative energy which sustains itself by the self-expressive unfolding of a Cosmic Self along an open time-line. The cosmic tempo, the Soul of the World-Body, is not merely temporal, but it is time-spanning (or trans-temporal, to borrow an expression from Professor Leighton's *Man and the Cosmos*). This seems to me to be only way of reconciling the disjunction between eternalism and the temporalism which constitutes the point of departure of Bergson's creative evolutionism.

Physical Time: I have used the term 'continuant' to designate the unity of any type of object within the Cosmic Matrix. The unity of an object arises from the fact that it remains invariant when viewed from a frame of reference at rest with respect to the time-system of the object observed. Since time in physical science expresses the order of change of material configurations and their interactions, and since matter by its very nature is discrete, physical time may take on the appearance of discontinuity. This carries with it the idea that the probability within any system (*e.g.*, entropy) is not continuous with the probability of another system, if the two systems are distinguished by the qualitative difference which marks the transition states from one type of object to another (*e.g.*, atoms to molecules). Discontinuity in time occurs in its most striking form in physics in the quantum theory of energy. But purpose, I hold, also manifests itself in physical phenomena, and evidence indicating that electrons, in their behavior, manifest 'memory' and can anticipate the future (stressed especially by C. G. Darwin) lends support to this view.

Biological Time: The real time of nature more closely resembles the time of experience than the spatialized time of physical science. Indeed, as Alfred J. Lotka [11] surmises, psychic time can not be deduced from the differential equations of dynamics because these equations of motion are incomplete and do not wholly determine the actual course of physical events. Atoms, if not electrons, have a duration in which they live and move, and this is the time it takes for them to display their properties (presumably one revolution of an electron around a proton in the case of the hydrogen atom). This time-span is enriched and intensified in the higher continuants of nature. Material aggregates are synthesized by the radiant energy of space (*e.g.*, photosynthesis of formaldehyde by chlorophyll), and we therefore remain responsive to frequencies and rhythms, and this provides the basis for the subjective time-sense. Time estimation rests upon a correlation of the subjective span of attention with the rhythms of cosmic stimuli. Abnormalities of time-perception arise from the failure to keep in touch with the socially accepted tempos of objective rhythms.

[11] *Elements of Physical Biology*, p. 37.

Psychological Time: One of the commonest facts of nature is the summarizing of a discrete series of elements into new unitary wholes. Thus what Lloyd Morgan calls the rhythmic whirl of micro-events, which constitute atoms, are again unified into molecules. Similarly, at a higher stratum, the discrete temporal mosaics of sound sequences are unified into new temporal patterns (*pitches*) which, in turn, may enter into higher forms such as musical phrases, themes and movements. Psychic life, therefore, also exhibits levels of synthesis. The base of any series may itself, for its own frame of reference, be a unitary mode of behavior (continuant); but these wholes may be analyzed into the sub-groups of lower continuants. Analytically the unit of the time-sense may be the duration of the sensation (a nerve pulse, neurologically), but a temporal whole is not built up by a compounding of sensations.

Conceptual Time: The body-mind, with its different levels of synthesis, has the power of rising above the objects of lower orders. Thus conceptual schemes, not directly related to cosmical and physical space and time (such as non-Euclidian geometries and reversible time-lines), can be thought out. Following Meinong we may call these schemes the products of objects of higher orders. But conceptual time does not necessarily falsify real time, as Zeno, Bradley, Bergson and James have argued.

To a certain extent, *instants,* possessing no dimensions, are abstractions, and to that extent empirically unreal. Actual time is not composed of an infinite series of infinitesimals of no size. I should prefer to say that an instant is the ideal limit of a temporal series converging towards zero. But even in mathematics an instant is always a unit of a serial order. Any term in an order series implies the other members of the sequence. Motion, therefore, is not inconsistent with time conceived as composed of instants, since each individual of a generating series implies the relation of 'betweenness' holding in the irreversible series of 'before' and 'after.'

Time as we grasp it is largely a product of intellectual analysis, as Professor J. T. Shotwell [12] has shown. Intellectual analysis

[12] "The Discovery of Time," *Journal of Philosophy,* 1915, Vol. 12, pp. 199, 253, 309, ff.

does not 'murder' reality because synthesis is complementary to analysis. Internality and externality are progressively but not necessarily continuously evolving orders of being. The conceptual analysis by means of which we seek to interpret the world is an expression of the same absolute order which makes the external world intelligible to and interpretable by the human intellect. As the present writer has said elsewhere, the organism is not the passively moulded product of the external forces of nature. The organism, and the external world as we know it, have developed together by a give and take, in which conceptual interpretation, supplementing perceptual experience, has partially created the forms of externality; and, in turn, the objective order has forced us to readjust our ideas (cerebral behavior) to its (the environment's) semi-determinate texture. Through the vast span of time in which this process of mutual intercourse and interadaptation of organisms to their environments has progressed, the environment has continued to take on a more articulate character, while the organism has continued to develop an apperceptive synthesis which it is super-imposing upon the external world. Conceptual time results from a process of adaptation of organism to environment, but the 'fitness of the environment' makes possible progressive evolution. To me this implies the truth of Doctor A. N. Whitehead's [12] speculation that the alliance between the passage of nature and the passage of mind, which is given in sense-awareness, arises from their both sharing in some ultimate passage which dominates all being.

OLIVER L. REISER.

OHIO STATE UNIVERSITY.

[12] *The Concept of Nature*, p. 69.

THE DOCTRINE OF BONDAGE AND RELEASE IN THE SĀNKHYA PHILOSOPHY.[1]

BONDAGE, according to the Sānkhya, is the feeling of the three kinds of pain, intrinsic, extrinsic and supernatural, arising out of the Purusa's experience of the evolutes or manifestations of Prakriti. What is the cause of such experience? The cause is the union of Purusa with Prakriti for the purpose of evolution. But the union between Purusa and Prakriti is eternal and therefore irresolvable. Is then Purusa eternally bound? The word 'bondage' has two senses, a wider and a narrower one. In the former sense, it indicates an eternal and general connexion between Purusa and Prakriti; even during the Pralaya or dissolution when all manifested things become absorbed into Prakriti, their primal Cause, such a connexion remains intact. In this sense of bondage, Purusa may be said to be eternally bound, for He never exists separately from Prakriti, but eternally pervades her. In the latter sense, it indicates a specific kind of bondage, namely, the feeling of the three kinds of pain arising out of the specific connexion which the Absolute Purusa enters into with Prakriti in order to evolve specific investments or embodiments for the purpose of His specific experience. In this latter sense, the word 'bondage' is frequently used in the Sānkhya System.

The real and immediate cause of this specific bondage is said to be *Aviveka*, or non-discriminative knowledge, under the influence of which the individualised Purusa forgets Himself as it were, and completely identifies Himself with the objects of His experience and enjoyment: to wit, the manifestations of Prakriti from the *Mahat* to the five gross elements and other objects composed of them. When, in this way, Purusa becomes completely encompassed by them, He then, under delusion, begins to think that the wants, appetites, passions and desires which really arise from the changeful conditions of the physical organism; the

[1] This is the last of three articles on the Sānkhya philosophy by the same author. For the preceding articles see this REVIEW, Vol. XXXIV, 1, pp. 51–69, and Vol. XXXV, 1, pp. 53–63.

changeful states of cognition, feeling and volition which really arise from the actions and reactions between the body and the environment; or in a word, the whole empirical self (*antahkarana* or *chitta*) are His own, and belong, as parts and parcels, to Himself. He proceeds further and identifies Himself with His worldly possessions, house, wife, children, relatives, etc. He begins to say, 'I am enjoying happiness, I am enduring pain.' Thus He loses sight of Himself as something different and becomes completely submerged in Prakriti. This complete self-forgetfulness and the consequent identification of Himself with Prakriti and her manifestations, which is usually found to be the case with all worldly people, is considered by the Sānkhya to be the real perennial source of all His misery and trouble. So we find that the real cause of bondage is not the union but the delusion, and that the cause is psychological, not metaphysical at all. Being psychological, the delusion may be dispelled by the development of better psychical conditions through the adoption of proper and adequate means. The Sānkhya admits the possibility of such a development through suitable moral and religious training and practices, and holds that the delusion comes to an end after going through a course of such training and practices extending over an indefinitely long period of time. And along with its end comes also the end of the bondage, *i.e.*, the complete relief from the three kinds of pain. It is curious that Prakriti performs a double function in this connexion. On the one hand, by variously manifesting herself, she supplies the materials for the enjoyment of Purusa and thereby supplies the means to His bondage; on the other hand, by thus satisfying Him to the full, she completes His enjoyment and brings the terms of His bondage to a close. A very elaborate account of such delusion and its consequences has been given in the *Sāntiparva* of the *Mahābhārata*.[2]

Now an important question suggests itself: To whom do the delusion and its effect, the bondage, really belong? The Sānkhya appears, at first sight, to say that they cannot belong to Purusa, because He is eternally enlightened and free: they therefore must belong to Prakriti. How then is Purusa deluded and bound?

[2] Chap. 302, verses 41–49, and chap. 303.

The Sānkhya seems to teach that the delusion and bondage are reflected on Purusa by Prakriti by virtue of her proximity to Him, just as the red tinge is reflected on a crystal vase by a china rose by virtue of its proximity. Though this analogy, by itself, is inappropriate, like those generally given in the Sānkhya, it suggests one important truth. The analogy appears at first sight to emphasise the point that Purusa remains essentially unaffected by the reflexion cast upon Him by Prakriti, just like a crystal vase which remains as it is, though it appears red on account of the reflexion cast upon it by a china rose. But really it emphasises the opposite truth. The crystal vase appears red so long as the reflexion exists. This shows that it has the capacity for being so reflected on, otherwise it could not be so reflected on. Thus Purusa really does not remain indifferent to the reflexion by which the delusion and bondage are cast upon Him by Prakriti, but becomes affected by the reflexion and remains so as long as it continues. Consequently, the delusion and bondage of Purusa is real. Is not this inconsistent with the eternally free and enlightened character of Purusa? To answer this question properly we should consider carefully the Sānkhya Doctrine of *Avidya* or *Aviveka, i.e.,* non-discriminative knowledge.

Avidya or *Aviveka* may be said to be what is opposite to *Vidya* or *Viveka, i.e.,* the knowledge of the distinction between Purusa and Prakriti. Therefore, it is the knowledge of the identity between them: when Purusa thinks Himself identical with Prakriti and her evolutes, He may be said to have *Avidya* or *Aviveka.* In other words, *Vidya* or *Viveka* is discriminative knowledge, while *Avidya* or *Aviveka* is non-discriminative knowledge, about Purusa and Prakriti. The same definition is given in the *Yoga Sutram:* "*Avidya* is the thinking of the non-eternal to be eternal, of the unclean or impure to be clean or pure, of the painful to be pleasant, and of the non-spiritual to be spiritual." Vyasa adds the following in his commentary on the above: "Just as the opposite of friend does not mean the absence of friend, or only friend in name, but an enemy; and the opposite of grazing field, not the absence of grazing field, or only grazing field in name, but another wide land; so *Avidya* is not indicative of proof, or of ab-

sence of proof, but is a kind of knowledge opposed to *Vidya*." In other words, *Avidya* is non-discriminative knowledge—the knowledge of the identity between Purusa and Prakriti. Thus, *Avidya* is as real as *Vidya;* they are both positive, but about different things: *Vidya* is the knowledge of the distinction, and *Avidya* is the knowledge of the identity, between Purusa and Prakriti. But Purusa is eternal, pure, full of bliss, spiritual, and the manifestations of Prakriti are non-eternal, impure, painful, and non-spiritual. Therefore, *Avidya* is the knowledge of identity between what is eternal, pure, blissful, and spiritual, and what is non-eternal, impure, painful, and non-spiritual.

Now, not all knowledge has the same value; some ought to be retained and some shunned. *Vidya* is true knowledge, because it is the knowledge of the distinction between Purusa and Prakriti, which is true; while *Avidya* is false or erroneous knowledge, because it is the knowledge of the identity between Purusa and Prakriti, which is false or erroneous. This appears to be the reason why the Sānkhya says that *Avidya* should be shunned and *Vidya* should be attained, if we desire Release.

Now the question naturally arises: Why do we say that the knowledge of identity between Purusa and Prakriti is erroneous? Purusa and Prakriti are no doubt distinct, but they are also related. Purusa and Prakriti are both all-pervading, *i.e.,* they mutually include each other, they are related as subject and object —as whole and part; their union is eternal and irresolvable, they are interdependent, and so on. Purusa and Prakriti are therefore both distinct and identical at the same time; that is to say, they are relatively distinct and identical, not absolutely so. But, the reason why the Sānkhya calls the knowledge of the identity between Purusa and Prakriti erroneous is evident. Purusa and Prakriti are not absolutely identical or entirely the same thing, and if we regard them so, as all the worldly people do, our knowledge must be erroneous; and so long as we continue to do so, we may be said to be under the influence of the delusion caused by *Avidya*. Therefore, *Avidya* is false and delusive, not because it is the knowledge of the identity between Purusa and Prakriti, but because such identity is conceived by all individualised Purusas

(*i.e., jivas*) to be absolute until they attain *Vidya* and the consequent release.

From the above it is evident that the real cause of *Avidya* is the differentiations of the Absolute Purusa into individualised Purusas effected through His specific unions with Prakriti which result in the so-called twenty-three categories, beginning with *Mahat* and ending with the *Pancha Mahābhutas,* including all other objects composed of them. But the differentiating activity of the Absolute Purusa is eternal; therefore the consequent *Avidya* is also eternal. Now, another important question suggests itself: If *Avidya* is eternal, how can it be destroyed? The Sānkhya says it can be destroyed by *Vidya* or discriminative knowledge. But *destruction* of *Avidya* by the attainment of *Vidya* is an event in time. How then can an event in time such as the destruction of *Avidya* affect the latter which, being eternal, is above time, or more appropriately, embraces the whole of time? That is to say, *Avidya,* which is eternal, cannot be destroyed or put to an end. How can we reconcile this with the positive assertion of the Sānkhya that *Vidya* is capable of dispelling *Avidya,* just as light is capable of dispelling darkness? In this way: *Avidya,* which consists in the confusion of the relative identity with the absolute identity between Purusa and Prakriti (including her evolutes), may be put to end only by attaining the understanding of the true nature of the confusion. And such an understanding is nothing but the knowledge that the identity is relative, not absolute; that is to say, it implies also distinction between Purusa and Prakriti. Thus, in fact, *Avidya* is not entirely destroyed but only transformed or modified, or assumes a form quite different from that which it had before; for the knowledge of identity is not and cannot be wholly destroyed, it being partially or relatively true. Therefore, when the Sānkhya says that *Vidya* is capable of dispelling *Avidya,* what it really means to say is that the consciousness of the distinction between Purusa and Prakriti transforms or modifies, not altogether destroys, the erroneous consciousness of the absolute identity between them. And the transformation or modification of *Avidya* is not inconsistent with its eternal nature. For, according to the Sānkhya doctrine of causality, nothing

is created out of nothing, or comes to nothing, but everything undergoes a process of evolution, *i.e.*, a process of transformation or modification, which process also is eternal. Similarly, *Avidya* undergoes a process of transformation or modification without changing its nature altogether, and appears to be a quite new thing when it is completely transformed at the time of release: this its complete transformation or modification is designated in the Sānkhya as its complete dispelling or disappearance, because under its influence Purusa is no longer deluded. This point will be made more clear when we consider the Doctrine of Release.

We are now in a position to answer properly the question which we raised and left unanswered before, namely, the question, How is the reality of *Avidya* and *Bandha* (*i.e.*, non-discriminative knowledge and bondage) consistent with the eternally free and enlightened character of Purusa? The answer is: these two opposite assertions represent the two opposite standpoints from which we view His nature. According to the Sānkhya every individualised Purusa is a perfect differentiation of the Absolute Purusa from a particular or unique point of view. In as far as the Absolute Purusa exists, whole and undivided, in Him we may be said to be eternally free and enlightened; but in as far as, again, the Absolute Purusa expresses and realises, *i.e.*, embodies or invests, Himself in and through His unique and finite physical organism and its adjuncts, He appears deluded and bound or confined. Hence a double conception is necessary to understand the real nature of an individualised Purusa; and the delusion and bondage are real, not illusory, inasmuch as they are the indispensable conditions by means of which the Absolute Purusa in man gradually realises Himself and returns upon Himself as a liberated Being.

Why the Absolute Purusa imposes upon Himself such limitations is a question which is unanswerable, because unmeaning. The attempt to answer such a question by using words like *Avidya* or *Aviveka* is bound to be futile. The difficulties are not obviated by saying that *Avidya* really belongs to Prakriti and is transferred to Purusa by virtue of her proximity to Him, or, if He were really wholly immune from *Avidya*, nothing could make Him appear to be affected by it. The simile of a china rose casting its tinge

upon a crystal vase put near it does not in the least prove that the Purusa remains entirely unaffected by the casting of *Avidya* upon Him by Prakriti, on account of her proximity to Him. Besides, the word 'proximity,' being too vague and inadequate to express the relation between Purusa and Prakriti, who are eternally united and mutually pervading, rather increases the difficulty by proving that Purusa possesses the capacity for appearing to be affected by *Avidya,* as the crystal vase possesses the capacity for being red when placed near a china rose. Furthermore, Purusa and Prakriti being mutually pervading, whatever belongs to Prakriti must be pervaded by Purusa; that is, must be included in the nature of Purusa. Therefore *Avidya,* which belongs to Prakriti, must also belong to Purusa. Thus, we find that Purusa being all-pervading there is nothing in Prakriti which entirely falls outside the nature of Purusa. Again, *Avidya* which is a kind of positive knowledge, cannot be possessed by Prakriti who is subconscious; consequently, *Avidya* must, somehow or other, belong to Purusa. These are the reasons why we say that the question is the ultimate of all ultimate questions—it is about the very mystery of creation. We therefore conclude that the Absolute Purusa, working and realising in men, includes within Himself their psychical and physical organisations as indispensable means to His realisation, or returning upon Himself.

The Doctrine of Release: That Prakriti in man is not something wholly foreign and antagonistic to the Absolute Purusa in him may be shown to be true, if we consider the Sānkhya Doctrine of Release. What then is Release? It is the complete liberation from the three kinds of pain. How is such liberation attained? It is attained through *Vidya* or *Viveka, i.e.,* by the possession of true knowledge of Purusa, Prakriti and other categories. But that saving knowledge is not attained in one life; Purusa has to migrate from life to life for an indefinitely long period before He can attain it. What is the nature of the knowledge which saves him from the bondage? It is the knowledge of the distinction between Him and Prakriti including her manifestations. In the state of bondage, Purusa is completely self-forgetful and entirely ignorant of such distinction from Prakriti; but

through moral and spiritual cultures gone through for a period extending over numerous successive lives he gradually rises to the level of that consciousness of Self and of its distinction from Prakriti and her manifestations, which is the only means by which He returns upon Himself, contemplates His true essential nature, regains everlasting peace and contentment, and does not migrate any longer. This state is called by the Sānkhya one of liberation or release. But it should be carefully remembered here that the state of release is not a state of complete separation of Purusa from Prakriti; that is impossible. This conclusion will be further confirmed if we carefully examine the behavior of Prakriti and Purusa towards each other in the state of release as it has been described in the Sānkhya by means of various kinds of similes.

Consider, for instance, the following: (*A*) "As a dancer, having exhibited herself on the stage, desists from the dance, so does Prakriti cease, when she has manifested herself to Purusa."[3] Here it is stated that when Purusa has experienced or enjoyed all the manifestations of Prakriti to His satiety, she ceases to act, that is, to manifest herself any more to Him and thereby to bind Him further. And consequently he attains liberation, because he has nothing more to experience and enjoy, and therefore to be bound up with. This does not imply that Prakriti completely separates herself from Purusa, or *vice versa,* because, both being all-pervading, and for several other reasons described before, a complete separation is impossible. They still remain united, but their behaviour towards each other is wholly different from that which was found during the state of bondage. What that behaviour definitely is, is not expressly stated in the Sānkhya.

(*B*) "My opinion is, that nothing exists more bashful than Prakriti, who knowing that 'I have seen' does not appear again before Purusa."[4] This does not mean to say that Prakriti cuts herself completely asunder from Purusa, after she has been completely experienced and enjoyed by Him, but it simply means that she appears before Him no longer as a binding agency—she no longer manifests herself in such a way as to delude and bind Him,

[3] *Sānkhya Kārikā*, verse 59.

[4] *Ibid.*, verse 61.

as she used to do in the state of His bondage. This meaning is confirmed by the following verse.

(*C*) "So by a study of the principles is the final, incontrovertible and only one knowledge attained that I am not, nought is mine, and the ego exists not." [5] Here in a short compass the form of the saving knowledge is described. There are three parts of the sentence, and we should carefully examine them. (1) I am not: what does this exactly mean? It does not mean, of course, that I (*i.e.*, Purusa) am non-existent, for that is absurd; what it really means is that I am not now what I thought myself to be under the delusion during the state of bondage. During that state I forgot myself and completely identified myself with Prakriti and her evolutes; now, in the state of release, I have attained the knowledge of my distinction (relative) from them,—I am the Self, they are the Not-self, although they are also the parts of my content. (2) Nought is mine: This does not mean that I have no content—that I am a bare undifferentiated unity, for that is self-contradictory. It really means that my present contents are entirely different in kind from those which I thought myself to have during the state of bondage; or the very same contents which I have had during the state of bondage have now been so transformed and modified that they appear to me in a wholly different guise, and my attitude towards them has become also entirely different, so that I may now say that I have no such content as I had in the state of bondage. (3) The ego exists not: this does not mean that I am now extinct or dead. What it really means is this: I am no longer a selfish egoist, my particular individuality has been completely transformed into the universal personality: my deluded and confined Self—the Self under bondage—is now dead, and what now lives is the delivered and free Self: my false Self has died and my true Self now lives. So that what is denied here is not the true Self-hood, but the "short, brutish, selfish individuality." Some, as M. Cousin for instance, suppose that this verse declares "an absolute nihilism, the last fruit of scepticism." This is evidently wrong, because it is against the entire tenor of the Sānkhya Philosophy.

[5] *Ibid.*, verse 64.

(*D*) "With this [knowledge] Purusa, unmoved and Self-collected, as a spectator, contemplates Prakriti, who has ceased from production [and] consequently reverted from the seven forms" to her original state. Here it is clearly stated that Purusa still contemplates Prakriti, but as something completely transformed, *i.e.*, as no longer binding and deluding Him. Prakriti does not cease to exist for, nor separates herself completely from Him; but, she is not contemplated now in just the same way as before. Purusa is still the all-pervading subject and Prakriti the all-pervading object; and the theoretical relation between them is just the same now as it was before, but their *practical* relation has become different and transformed. In the state of bondage Prakriti used to delude and bind Purusa by her various manifestations. Now in the state of release, she has ceased to do so, but still she is an inseparable element of Purusa. This point is made very explicit in the following verse.

(*E*) "The one disregards because 'I have seen'; the other desists because 'I have been seen'; [and] notwithstanding their conjunction there is no occasion for [further] evolution."[6] Here it is explicitly asserted that the conjunction between Purusa and Prakriti is still intact; but what has been changed is the psychical delusion under which Purusa thought that the evolutes of Prakriti were His own productions and identical with Himself.

(*F*) "The attainment of adequate knowledge renders virtue and the rest inoperative; [Purusa, however] like a wheel revolving from the effect of [previously-received] impulse, remains [for a while] invested with a frame."[7] Here it is definitely stated that a liberated Purusa may remain associated with a body for a time. This fact is affirmed in the *Sānkhya Pravachana Sutram*.[8] Here it is also stated that there is no real antagonism between a liberated Purusa and His physical organism which is also a manifestation of Prakriti; the two may co-exist and be associated with each other. This shows that no separation takes place between Purusa and Prakriti at the time of release. The verse affirms another important truth; when a deluded and confined Purusa is re-

[6] *Ibid.*, verse 66.

[7] *Ibid.*, verse 67.

[8] *Cf.* Chap. I, aph. 157.

leased, *i.e.*, attains true knowledge about Himself and Prakriti, He rises above the spheres of duty and virtue, and His actions cannot be qualified by such words as good or virtuous. These epithets are applicable to human actions only, so long as human beings are conscious of the conflict between reason and inclinations—the self and the not-self—Purusa and Prakriti in them, from which conflict arises the sense of duty. But in a liberated or a perfectly rational Soul such a conflict has disappeared and has consequently banished the possibility of any action which may be called good or virtuous. This fact conclusively shows that the life of a liberated Purusa is a completely transformed one which has no resemblance with that of a deluded and unreleased Purusa. This does not mean that there has been separation between Him and Prakriti, but rather that the nature of their relation has been completely changed; and though Prakriti still exhibits herself to the released Purusa as before, her exhibitions are observed by Purusa in a quite different light and way; He is no longer affected and deluded as before. The lives of those *jivanmuktas* are instances in point. But the following verse appears to raise some difficulties.

(*G*) "When owing to gratification of ends, [its] separation from the body takes place and Prakriti ceases to act, [Purusa] obtains both absolute and final release from the three kinds of pain." Here the word *Kaivalya* seems to raise some difficulties. With some commentators the word means isolation, while with others, Vāchaspati, for instance, it means liberation from the three kinds of pain. I agree with the latter commentators, because their interpretation is consistent with the fact that separation or isolation between Purusa and Prakriti is out of the question. And that this is the true meaning is further confirmed if we consider what *purusārtha*, or the ultimate object of an individual Purusa is. The *Sānkhya Pravachana Sutram* says: "Now, permanent prevention of the threefold pain is the supreme purpose of Life."[9] The same thing is said in the *Yoga Sutram* also.[10]

[9] Chap. I, aph. 1.

[10] *Cf. Sādhanā Pāda*, aph. 16 & 26. See also *Kaivalya Pāda*, aph. 34, and Vyasa's commentary on it.

From the above it is plain that *kaivalya* means absolute freedom from pain; it is also called the establishment of the conscious power of Purusa in its own essential form on account of the cessation of the union or relation between Him and the Intellect. These two definitions do not at first seem to be identical. But closer examination shows that though they are not strictly identical there is no inconsistency between them; for the former is the necessary consequence of the latter. So that it is immaterial whether *kaivalya* is defined as the establishment of Purusa in His own essential nature, or as His absolute liberation from pain.

But one thing requires an explanation: the establishment of Purusa in His own essential form is said to be caused by the disappearance of the union or of the relation between Him and the Intellect. According to the Sānkhya such a union or relation cannot cease absolutely. The Sānkhya Kārikā explicitly says that even after the liberation of the individual Purusa such a union or relation remains intact, but only the attitude of Purusa and Prakriti towards each other changes and assumes a quite different form. This view is confirmed by the first part of aphorism 34, which is as follows: "*Kaivalya* is the latency which the *gunas* attain when they cease to fulfil the object of Purusa." But what is the object of Purusa? What is the *purusārtha?* The immediate object is the Purusa's experience or enjoyment of the *gunas* and their manifestations, the consequence of which is His bondage; the ultimate object is His absolute liberation, by attaining discriminative knowledge, from pain following upon that experience and bondage. It is evident that the *gunas* cease to fulfil the first object only, when Purusa attains emancipation. That is, Purusa ceases altogether to experience the *gunas* and their manifestations. What is the true meaning of this? Does Purusa cease wholly to experience the *gunas?* If so, how does Purusa, as liberated during his mundane life (*jivanmukta*), experience them? That is, how can His emancipation co-exist with his experience of the *gunas?* In his commentary on aphorism 30 of the *Kaivalya Pāda* of the *Yoga Sutram* Vyāsa holds that the wise *yogin* becomes free (from pain) even while alive (on this earth). The true meaning of the aphorism, therefore, should be that the

gunas cease to bind Him or give Him pain even though they still supply the materials for His experience or enjoyment. Or, otherwise expressed, He ceases to be painfully affected by the experience of the materials, by maintaining an attitude of indifference or aloofness towards them. And even if by *kaivalya* is meant the permanent rest of Purusa in His own essential form, it does not imply that He exists alone, *i.e.*, absolutely separated from the *gunas*, but that He has now regained the knowledge of His distinction from them, which He wholly lost in the state of bondage. And in this sense He may be said to rest in His own essential form—a form which is not painfully affected by the experience of them, which is wholly immune from pain arising from such experience. This interpretation is confirmed by the fact that even a liberated Purusa has a body, though quite different in nature and constitution from that which He has in the state of bondage.

From the above discussion it is evident that even in the state of release no separation between Purusa and Prakriti takes place. The state of release differs from the state of bondage only in this: that in the latter state Purusa is under the delusion that the body with all its adjuncts and with all that are directly or indirectly connected with them are His own evolutes, whereas they are all really the manifestations of Prakriti; that they are identical or same with Himself; that they are parts and parcels of His own life, and the sources of His miseries: and that in this way, He becomes entangled in the meshes woven by Prakriti. And this entanglement is the real cause of all His earthly troubles and affliction, while in the former state He gets out of such entanglement on account of His attaining true discriminative knowledge. Thereby He regains His freedom and absolute release from the three kinds of pain which beset Him so much in the state of bondage. But His union with Prakriti remains equally intact in both the states.

But it may be asked, why, then, does Prakriti cease to torment Him in the state of release, if her union with Purusa is still intact? The main reason for such cessation is that the attitude of Purusa towards Prakriti in the state of bondage is completely

changed and transformed in the state of release; in the former state He used to take one view with regard to His relation with Prakriti; He, now, in the state of release, takes an essentially different view. In the former state, He completely identified himself with Prakriti, forgetting His distinction from her; now, in the latter state, He comes to know His distinction, though not altogether forgetting His identity with Prakriti. Or, in other words, He comes to know that He is both distinct from and identical with Prakriti; that His distinction and identity are both relative, not absolute. The consequence of this essential change and complete transformation of His attitude towards Prakriti and her manifestations is that He is no longer troubled by the three kinds of pain arising out of the incessant vicissitudes of Prakriti and her manifestations, and has attained that everlasting peace and contentment which are the essential characteristics of a perfect and free being. Prakriti and her manifestations have been so transformed in relation to Him that they are no longer the sources of His pain, but of His peace and contentment, which really result from complete indifference, both to worldly joy and sorrow. So says *Bhagabatgitā:* "The union of the Individual Purusa with the Supreme Purusa is said to consist in equanimity with regard both to worldly pleasure and to pain."

A. K. MAJUMDAR.

CALCUTTA.

REVIEWS OF BOOKS.

Psyche: The Cult of Souls and Belief in Immortality among the Greeks. By ERWIN ROHDE. Translated from the eighth edition by W. B. HILLIS. (International Library of Psychology, Philosophy and Scientific Method.) New York, Harcourt, Brace & Co., 1925.—pp. xviii, 628.

For the purpose of this review I should observe at the outset that I have compared only a small part of the English with the German, but a sufficient amount, I think, to give me a fair notion of the character of the whole. I should say also that I have had before me only the 'second' and the 'ninth and tenth' editions of the original; but as the 'ninth and tenth' edition (1925), save for the introduction by Weinreich, is apparently a mere reprint of the 'eighth' on which the translation is based, this fact should not invalidate what criticism I have to offer, as on the other hand the appearance of the later edition does not detract from the value of Mr. Hillis's work.

In general it may be said that the English is fairly idiomatic and shows considerable deftness in devising phrases to convey the sense of the German compounds. Mr. Hillis has not sacrificed to the Graces, but his language is no more cumbrous than is almost inevitable in the attempt to follow honestly the involutions of Teutonic *Wissenschaft*—though it must be granted that Rohde in this respect is comparatively innocent. Occasionally it has seemed to me that the translator shows, not so much ignorance of the language he is rendering, as remissness in the effort at precision. For example, on p. 255 the English, "from a divine banishment of the commonplace," is at once flat in itself and a faulty version of the original, "durch göttliches Hinausversetzen aus den gewohnten Zuständen." Nor does Mr. Hillis come any closer to Plato's Greek (*Phaedrus* 265 A) from which the clause is quoted, and which is thus admirably paraphrased by Thompson: "by a divine influence emancipating the soul from the yoke of usage and convention." To take another, less conspicuous, example, the sentence (p. 368), "So it is the soul itself, the creative fire, which *creates* the body," might just as well have been turned so as to render the German exactly, thus: "So it is the 'soul,' the creative fire, which builds the body for itself." I have noted a good many lapses of this sort in the pages tested, but in no case have they been very serious.

One real service Mr. Hillis has performed. Rohde was unsystematic in his mode of giving references, and his German editors have not much bettered the matter. In straightening out these irregularities, and in referring to more recent editions of the Classics and, where possible, to English translations of German works, Mr. Hillis has done something to make the notes more intelligible and accessible to English readers. For example, he observes that Rohde has four different ways of referring to the *Iliad* and the *Odyssey* (I have myself in my cursory examination noted only two ways, but I take the other two for granted), and this needless, though unimportant, inconsistency is now rectified. Again, Rohde cites Clemens Alex. by the page and letter of Heinsius' re-edition of Sylburg, in a manner which would baffle most scholars who undertook to verify the references. Mr. Hillis has taken the pains to alter these blind figures to the marginal page of Potter and to book and section. For this the reader will be grateful; but it is rather odd that in the case of the only citation from Clement (p. 393) verified by me, I found "Cl. Al., *Str.* 9, v, p. 649 P," where the correct form should be Cl. Al., *Str.* v, 9, p. 649 P. It is pleasant to add that, so far as I went, I discovered not a single error in the Greek quotations, not even a misplaced accent, which for the commercial press of England, is an extraordinary merit.

These are pedantic details, but they are the sort of thing about which I suppose the prospective purchaser or user of the translation will care to be advised. As for the work itself, it is too well known to be reviewed at this late day or to warrant any comments on my part. For any student who is interested to go behind the formal and more obvious aspect of Greek culture to the religious life of the people and the spiritual significance of their literature, *Psyche* is one of the indispensable books. Mr. Hillis's version will lighten the labor of scholars to whom German is not currently familiar. Some reservation of course must be made in our acceptance of Rohde's thesis. He was deeply committed to the animistic theory of Tylor and Spencer, and animism we are beginning to believe tells only half the story. As Otto has shown in *Die Manen*, even Homer probably distinguished between the spirit of the living body, the *thymos*, and that of the dead man, the *psyche*. More serious perhaps is the fact that Rohde fails to give weight to the more or less artificial, or aristocratic, character of the Homeric poetry, and so, taking the Homeric mood as typically national, draws too sharp a distinction between the natural religion of the Greeks and the Orphic mysticism introduced from without. In my opinion he is wrong also in his view of the belief, or lack of belief, in

immortality at a later date. It is not fair, I think, to represent Socrates as ultimately sceptical in the matter. There may be a note of agnosticism in the *Apology*, but this is by the way, so to speak, and is quite overborne by the assured tone of the last division of the speech, and by Socrates' insistence on the meaning and value of the soul. And certainly it is a gross error in criticism to infer from the first paragraphs of *Republic* ii that at the time of writing them Plato himself was little interested in the subject, and that the mention of immortality in the tenth book is a "paradox." The paradox is plainly and avowedly in the supposition of the second book that the soul is mortal, and there is no evidence of a change of religious views indicating various strata in the dialogue.

So much, and more, must be deducted in estimating the value of Rohde's theories, but his work is still one of the first importance and well worthy of translation.

PAUL ELMER MORE.

PRINCETON UNIVERSITY.

Hermetica: The Ancient Greek and Latin Writings which contain Religious or Philosophic Teachings ascribed to Hermes Trismegistus. Volume I, Introduction, Texts and Translation. Volume II, Notes on the *Corpus Hermeticum*. Edited, with English translation and Notes, by WALTER SCOTT. New York, Oxford University Press, American Branch, 1924 and 1925.—pp. 550; 482.

Professor Walter Scott is said to have devoted the last many years of a long life to the compilation of this elaborate edition of the Hermetic literature. The result has more than justified his labour; for there is no doubt that what we have here before us is by far the best and completest treatment of this literature now available in any language. Indeed we must confess to something almost like a feeling of regret that this vast energy of learning was not expended on some text of greater intrinsic importance; for there are many classical writings of greater weight than the *Hermetica* which still lack a monumental edition and commentary of this kind.

The Hermetic documents with which Professor Scott concerns himself are, of course, not the queer mass of writings concerning astrology, magic and other occult sciences which make use of the name of Hermes Trismegistus, but the very different body of philosophico-religious writings which are pseudographically connected with the same mysterious name. There is first the so-called *Corpus Hermeticum*, a collection of

some seventeen distinct *libelli*, which first appears in collected form in a number of fourteenth-century MSS; there is secondly the *Asclepius* which was long falsely attributed to Apuleius and which survives only in a Latin version; there is thirdly the considerable collection of Hermetic documents preserved by the doxographer Stobaeus in his sixth-century *Anthology;* and finally there are a few quotations scattered through the pages of the Church Fathers. Professor Scott's first volume consists of a carefully edited and emended text of this body of literature, with a most readable English translation *en regard*, and preceded by an Introduction, 110 pages long, which is easily the best general account of the Hermetic literature anywhere to be found. The second volume is a running commentary on the *Corpus Hermeticum* and brings immense stores of classical, philosophical and historical learning to bear upon the elucidation of almost every phrase. What particularly impresses the reader is the admirable extent and detail of the author's knowledge of Hellenistic theology and philosophy as a whole; and the main value of this great mass of annotation is undoubtedly the very large extent to which it settles the historical relationship in which the Hermetic doctrines stand to the teachings of other and earlier schools of thought. The third volume, which is promised soon by the publishers, will contain a similar commentary on the remaining writings; and a fourth volume will consist of appendices and of a collection of *testimonia* to the Hermetic writings and doctrines gathered from contemporary and later literature.

The fact that some two hundred pages of Greek and Latin (and even these including lengthy foot-notes of apparatus) are made the subject of nearly two thousand pages of commentary is itself an indication of the definitive nature of Professor Scott's contribution. One might have expected, perhaps, that a commentary on this scale would have been based on a more or less complete collation of the MSS. This, however, is not the case. Professor Scott has contented himself with personally collating three MSS. and a portion of a fourth, persuading a friend to collate the greater part of a fifth, and relying for the rest on the published readings of Reitzenstein, thus leaving some MSS. quite unused. How far this may be a source of weakness it is impossible for the non-expert to guess; but many of Professor Scott's emendations are of so bold and apparently hazardous a kind that one wonders whether a fuller collation of the MSS. might not still be useful.

The moot question about the Hermetic teaching has of course always been the question of its historical provenance and its relationship to

other philosophical and religious movements in the ancient world. That the writings themselves hail from Egypt is clear to any reader, and throughout the Early and Middle Christian Ages (from Tertullian downwards) it seems to have always been believed that the thought contained in them was also native to Egypt, and was the source rather than the product of the Greek philosophical development. One Egyptian scholar, Sir Flinders Petrie, still clings obstinately to this view, dating the earliest of the writings from about 510 B.C., and in one of his recent essays has accordingly discoursed very surprisingly on "Egyptian Conceptions of Immortality" (see the volume on *Immortality* edited by Sir James Marchant). The true state of the case was, however, realised by Casaubon at the beginning of the seventeenth century; and now, following in the wake of Reitzenstein and other scholars, Professor Scott puts it beyond all doubt. The Greek of the *Hermetica* is just the ordinary κοινή of the post-classical writers, and the philosophical religion which they preach is a very recognisable fusion of late Platonism and late Stoicism. Since we definitely know that this form of eclecticism was first contemplated by Posidonius of Rhodes, who died about 50 B.C., we can conclude that our documents were written after that date; and references to them by other writers make it as certain that they were already in existence shortly after 300 A.D. Professor Scott's conclusion, after careful and convincing argument, is as follows: "The *Hermetica* which have come down to us were most of them, if not all, written in the third century after Christ. Some of them may have been written before the end of the second century; but probably none so early as the first century." As to the presence in the writings of elements deriving from the indigenous religion of the country in which they were written, Professor Scott's conclusion (in which he will carry nearly all his readers with him) is that Egyptian influence may be traced in the fervid emotional temper of the writings, but not at all in the ideas set forth in them. Of Jewish influence there is, according to Professor Scott, something, but not much. Of Christian influence there is but one doubtful trace. On the other hand, Professor Scott believes that there may have been some borrowing the other way about and that accordingly "it might be said that in the *Hermetica* we get a glimpse into one of the many workshops in which Christianity was fashioned." In this also he carries our assent; but to speak, as he does in one place (Vol. II, p. 304), of "the many different religions included under the vague term 'Christianity,'" is to go too far and to allow zeal for the recognition of one half of the truth to make him forget the other half.

For the historian of the Western mind the Hermetic literature is of no inconsiderable interest; but for the student of philosophy its independent importance cannot be said to be very great. There are really very few thoughts in these pages that are genuinely new or that cannot be found better expressed in earlier or in contemporary literature—particularly in Plato and Plotinus. Yet what Professor Scott says of the first part of the *Asclepius* may be applied to the whole: "It is not a mere repetition of traditional formulas; the writer's words ring true, and are alive with genuine feeling. If he has adopted his beliefs from others, they are none the less his own." Of the many beautiful passages which adorn these pages, perhaps the finest and most moving are those which deal with the vision of God that comes to "the eyes of the mind," when the soul has been purged from all unworthy thoughts and desires. Indeed Professor Scott writes: "If one were to try to sum up the Hermetic teaching in one sentence, I can think of none that would serve the purpose better than the sentence, 'Blessed are the pure in heart, for they shall see God.'" However, the kind of purity that is intended is of a much more ascetic kind than any that is commended in the New Testament. It is a Neo-Platonic "hating of the body." "First," we are told, "you must tear off this garment which you wear, —this cloak of darkness, this web of ignorance, this prop of evil, this bond of corruption,—this living death, this conscious corpse, this tomb you carry about with you—this robber in the house, this enemy who hates the things you seek after, and grudges you the things which you desire." That is very significantly different from the Pauline doctrine that "your body is the temple of the Holy Ghost."

The Oxford University Press has printed and bound the volumes with even more than its usual good taste and generosity, and has made them a real pleasure to handle.

JOHN BAILLIE.

AUBURN, NEW YORK.

Science and the Modern World. Lowell Lectures, 1925. By ALFRED NORTH WHITEHEAD. New York, The Macmillan Company, 1925. —pp. xi, 296.

In this book Professor Whitehead pursues a double purpose. On the one hand, his subject is historical and concerns the evolution of scientific concepts during the last three centuries in their broader cultural relations; on the other hand, partly by way of criticism of these concepts, he develops a philosophic, or rather, frankly metaphysi-

cal, cosmology which constitutes his own theory of reality. Those parts of the work which deal with the broader phases of the history of scientific concepts and with the relations of science to poetry, religion and practical life are eminently readable and instructive and should make the book well worth while to readers who are neither epistemologists nor metaphysicians. In what follows, however, I shall discuss only what bears directly upon general philosophical theory.

The spirit of the Middle Ages was, Professor Whitehead holds, essentially rationalistic while modern science has been guided by a sense of irreducible and stubborn facts. Science "has remained predominantly an anti-rationalistic movement, based upon a naïve faith. What reasoning it has wanted, has been borrowed from mathematics which is a surviving relic of Greek rationalism, following the deductive method. Science repudiates philosophy. In other words, it has never cared to justify its faith or to explain its meanings; and has remained blandly indifferent to its refutation by Hume" (p. 23). But the time has come, Professor Whitehead believes, for science to abandon its naïve and uncritical attitude and to give an account of itself which shall be satisfactory to reason. The old conceptions of time and space, matter and energy, atoms and ether are proving unsatisfactory; they must be reinterpreted and brought into accord with the concrete facts of experience. This reinterpretation is to take place under the guidance of reason, while philosophy as the critic and harmonizer of the abstractions of the sciences is to be again brought to a condition of fruitful activity and recognized as "the most effective of all the intellectual pursuits" (p. x). In a sense, then, Professor Whitehead proposes to return to the attitude of medieval rationalism and to construct a metaphysical and cosmological system which shall be more than what the current scientific concepts have shown themselves to be, a system of working fictions. He is not content with the easy-going pragmatic justification of the ultimate concepts of science but manfully shoulders the metaphysical problem of the true nature of the real.

The pivotal assumption of the materialism which is bound up with the bifurcation of primary and secondary qualities is the notion of *simple location*. The material substance is said to be "*here* in space and *here* in time or *here* in space-time, in a perfectly definite sense which does not require for its explanation any reference to other regions of space-time" (p. 69). To a science constructed on this basis the phenomena of nature are determined by the configurations of their masses. "This is the famous mechanistic theory of nature. . . . It is

the orthodox creed of physical science. Furthermore the creed justified itself by the pragmatic test. It worked" (p. 71). But "the history of thought in the eighteenth and nineteenth centuries is governed by the fact that the world had got hold of a general idea which it could neither live with nor live without" (p. 72). Now this mechanistic conception is founded on the notion of simple location. "So long as any theory of space or time can give a meaning either absolute or relative to the idea of a definite region of space and of a definite duration of time the idea of simple location has a perfectly definite meaning." Professor Whitehead believes "that among the primary elements of nature as apprehended in our immediate experience, there is no element whatever which possesses this character of simple location" (p. 81).

In place of this conception of space-occupying bodies the author proposes a conception of events. These events, however, are not easy to imagine. The guiding idea appears to be derived from the facts of visual perception. The castle, the planet and the cloud which we perceive here are supposed to exist at a distance. They exist in us in so far as we perceive them. But perception is cognitive and we may designate the universal in-each-other of events by the term *prehension*. Prehension implies no mind or consciousness. "For Berkeley's mind," says Professor Whitehead, "I substitute a process of prehensive unification" (p. 98). "The things which are grasped into a realized unity, here and now, are not the castle, the cloud and the planet simply in themselves, but they are the castle, the cloud and the planet from the standpoint, in space and time, of the prehensive unification. In other words, it is the perspective of the castle over there from the standpoint of the unification here. It is therefore aspects of the castle, the cloud and the planet which are grasped into unity here" (p. 98). The prehensive unities are the monads of Leibniz mirroring perspectives of the universe. This mirroring is apparently conceived by the author as a kind of generalized unconscious perception. "Perception is simply the cognition of prehensive unification; or more shortly perception is cognition of prehension. The actual world is a manifold of prehensions" (p. 101). These prehensive unities do not possess simple location in space and time for "space and time are simply abstrations from the totality of prehensive unifications as mutually patterned in each other. Thus a prehension has simple location at the volume A in the same way as that in which a man's face fits on to the smile which spreads over it" (p. 101).

The event, then, which is the element of Professor Whitehead's

cosmology, is the complex of aspects which are prehended into unity. I understand this to mean that it is the complex content of a possible act of perception conceived as independent of the perceiver. Or perhaps one should say, of a possible act of experience, using the term as including much more than perception. For events mirror past, present and future. "In a certain sense, everything is everywhere at all times. For every location involves an aspect of itself in every other location" (p. 128). Events also possess value and contain certain 'eternal objects' (universals). Professor Whitehead apparently accepts a kind of pan-objectivism, an objectification of the whole content of experience. We must adopt a "provisional realism," which does not exclude a final idealistic interpretation. Subjectivism is criticized on three grounds. (1) When we directly interrogate our experience we find that "we are within a world of colors, sounds, and other sense-objects, related in space and time to enduring objects such as stones, trees and human bodies. We seem to ourselves elements in this world in the same sense as are the other things which we perceive. . . . I hold that the ultimate appeal is to naïve experience. . . ." This argument is obviously very weak, since naïve experience after all only proves that what is experienced is experienced, but proves nothing about the existence of what is experienced save in so far as it is the content of an act of experiencing. The person having naïve experience *believes,* no doubt, in naïve realism but it is to be noted that naïve realism, as the passage just quoted indicates, is a simple faith in *things* rather than in a world of detached interpenetrating aspects which can only be conceived with great difficulty. The appeal to naïve experience is an appeal to a questionable authority which testifies to a very different thesis than the one to be proved. (2) Professor Whitehead's second argument against subjectivism is based on "the particular content of experience." Our historical knowledge tells us of ages in the past when, so far as we can see, no living being existed on earth. Again it also tells us of countless star-systems, whose detailed history remains beyond our ken" (p. 125). This is obviously simply another appeal to "common sense" and again implies the ordinary notions of space, time and bodies. The subjectivist can apply the doctrine of the as-if, the doctrine of possible experience in the sense of Kant and Mill and in this way attach a meaning to propositions which would be for him about non-existent objects. (3) The third argument is somewhat obscure. It is based on "the instinct for action." Our "activity passes beyond self into the known transcendent world" (p. 126). No doubt, so it seems to the practical man, but the argument, as an argument, seems to be a *petitio*

principii. The weakness of these arguments appears to indicate that Professor Whitehead's objectivism is not wholly an illustration of that appeal to *reason* which we learned above was to give the final decision.

The difficulty which arises here, however, apart from the question of the validity of these arguments, is whether the world of objective prehended unities or events is not conceived after all very much on the pattern of the much simpler system of *things* which has hitherto proved so pragmatically successful both for everyday life and for science. This suspicion is confirmed when we read that "the body is the organism whose states regulate our cognisance of the world. The unity of the perceptual experience therefore must be a unity of bodily experience. In being aware of the bodily experience, we must therefore be aware of aspects of the whole spatio-temporal world as mirrored within the bodily life" (p. 128). "Your perception takes place where you are and is entirely dependent upon how your body is functioning. But this functioning of the body in one place exhibits for your cognisance an aspect of the distant environment, fading away into the general knowledge that there are things beyond. If this cognisance conveys knowledge of a transcendent world, it must be because the event which is the bodily life unifies in itself aspects of the universe" (p. 129). This passage is very significant for it shows the inability of the author to escape from the conception of material things which possess "simple location" in time and space. Professor Whitehead asks us to abandon the common sense notion of things in space and time and to substitute therefor the conception of events as prehended unities, while he himself apparently continues to think of these prehended unities very much as if they were spread out in time and space in the ordinary way. *Things* are after all the vastly simpler hypothesis and do not seem open to criticism as long as we do not take them as metaphysical ultimates. They are no doubt fictions from the standpoint of metaphysics but it is decidedly open to question whether these fictions may not be indispensable for natural science and quite irreplacable, for concrete scientific purposes, by the qualitative content of immediate experience. Professor Whitehead's system seems to represent a blending of metaphysics and scientific cosmology into something not very acceptable from either point of view.

As a metaphysician, Professor Whitehead must find a place for value. "The element of value, of being valuable, of having value, of being something which is for its own sake, must not be omitted in any account of an event as the most concrete actual something. 'Value' is the word I use for the intrinsic reality of an event" (p. 131). "The

salvation of reality is its obstinate, irreducible, matter of fact entities, which are limited to be no other than themselves. Neither science, nor art, nor creative action can tear itself away from obstinate, irreducible, limited facts" (p. 132). Plato would have said that the resistance of facts to ideas is the source of anti-value or evil, but for Professor Whitehead value is the ultimate factuality or absolute givenness of events. It is to be noted, however, that this idea of value is formed in abstraction from the concrete regions of experience where values are found, namely, ethics and æsthetics, and that it merely refers to a metaphysical or logical aspect of things. Thus the most insistent evils of human experience would, in so far as they were insistent, possess value in Professor Whitehead's sense. Consequently, it does not seem too much to say that this use of the term 'value' is either meaningless or equivocal.

Professor Whitehead differs from Mr. Bertrand Russell in that, unlike the latter, he has slight inclination to Humean phenomenalism. He believes that there is an underlying "substantial activity." He compares his events with Spinoza's modes. The one substance of Spinoza is for him "the one underlying activity of realization individualizing itself in an interlocked plurality of modes. Thus concrete fact is process. Its primary analysis is into underlying activity of prehension, and into realized prehensive events. Each event is an individual matter of fact issuing from an individualization of the substrate activity. But individualization does not mean substantial existence" (p. 99). There is, then, an underlying self-differentiating activity behind all particular events. We are here far removed from the atomism which has been thought essential to the new realism. The inevitable question, however, is whether if we are to permit the use of the concept of substantial activity, it would not be more in accordance with experience to attribute it, as Kant or Fichte would have done, to consciousness as something raised above the order of nature.

The most striking difference between Professor Whitehead and the new realists is his emphasis on internal relations. He understands the interpenetration of events in very much the way in which the Hegelians understand the organic unity of the universe and certainly quite in the sense in which Leibniz held that the whole universe was mirrored in each monad. The world is a *continuum* of events rather than an aggregate, and is conceived as an "organic mechanism" (pp. 112, 151). If "organic mechanism" is to be the fundamental category it is clear that the spontaneity of consciousness must be relegated to a very

subordinate position or else, as is indeed alone consistent with a naturalistic system, denied altogether.

The chapter on God is certainly significant and striking in such a context. In one of the early chapters the author declares that "any summary conclusion jumping from our conviction of the existence of such an order of nature to the easy assumption that there is an ultimate reality which, in some unexplained way, is to be appealed to for the removal of perplexity, constitutes the great refusal of rationality to assert its rights. We have to search whether nature does not in its very being show itself as self-explanatory" (p. 130). But in the chapter entitled "God" the author indicates his belief that nature is not self-explanatory. God is the Principle of Concretion, the ultimate irrational ground for the passage from possibility to actuality. "God is the ultimate limitation and His existence is the ultimate irrationality. For no reason can be given for just that limitation which it stands in his nature to impose. God is not concrete, but he is the ground for concrete actuality. . . . The general principal of empiricism depends upon the doctrine that there is a principle of concretion which is not discoverable by abstract reason. . . . He has been named respectively Jehovah, Allah, Brahma, Father in Heaven, First Cause, Supreme Being, Chance" (p. 250). One wonders whether the last name is not the true one, since the idea of God seems to indicate merely the ultimate inexplicable factuality of experience rather than a positive explanatory principle. Whether Professor Whitehead regards God as the cause of good alone, as Plato would have all poets and theologians do, or whether he accepts a Spinozistic indifferentism, I am unable to decide from what is said on p. 250.

There remains much which I cannot even touch upon. The chapters on the nature of mathematics and on the quantum theory are very instructive. The theory of Abstraction is no doubt important—could one understand it. On the whole Professor Whitehead's discussions are illuminating and stimulating and pervaded by much sound judgment. His rationalism and Platonism (with regard to the 'eternal objects') point to a profound philosophy. And yet it may be questioned whether either physics or metaphysics would benefit by the intimate union between the two which Professor Whitehead suggests. In the past science has gained its victories largely by excluding epistemological and metaphysical considerations and it seems hardly likely that science, as such, would benefit by exchanging clear but abstract notions for notions which are perhaps concrete but which are certainly neither exact nor easy to handle. The new cosmology is not

obviously helpful from the purely scientific standpoint, while metaphysically it confronts age-old difficulties. From the latter standpoint its chief deficiency seems to be an inadequate idea of the unique type of being which is called *consciousness*.

WILLIAM CURTIS SWABEY.

NEW YORK UNIVERSITY.

The Travel Diary of a Philosopher. By COUNT HERMANN KEYSERLING. Translated by J. HOLROYD REECE. Two volumes. New York, Harcourt, Brace & Co., 1925.—pp. 338; 400.

Count Keyserling is a philosophical writer of considerable distinction and originality, but nothing which he had written before he took this journey around the world would have led one to expect such a unique work of genius as his *Travel Diary* proves to be. His earlier works are, *Gefüge der Welt; Unsterblichkeit; Prolegomena zu Naturphilosophie; Philosophie als Kunst; Wiedergeburt* and *Schöpferische Erkenntnis*. All except the last one, which came from the press in 1922, were published before the war. In 1908, he inherited his father's extensive estate in Esthonia. His world journey was made in 1911, and the *Travel Diary* was written between that date and 1914. The printing of it was blocked by conditions of war, and in the interim the book was extensively rewritten. The public response to the book when it appeared was almost immediate in Germany, where fifty thousand copies of it were quickly sold. Having lost his estate through the Russian Revolution, Count Keyserling founded a School of Wisdom in Darmstadt in 1920 where his present home and sphere of labors are.

The *Travel Diary* is a peculiar and quite extraordinary work, unlike any other book one has ever read. Dr. Hugo Münsterberg used to go to the theater when he had a difficult address to prepare, and, sitting there with his eyes fixed on the stage scene, his mind worked at its best on the topic of the forthcoming address. When the curtain rolled down, the main lines of the speech were all in hand. Somewhat so, Count Keyserling has traveled from land to land, plunged into the movements of countries and races, so that he might think undisturbed! He has had almost no interest in the objective world where his travels lay. He is a very poor geographical guide. He visits scenic wonders but not to describe them. In the presence of stupendous things, he is busy only with what is going on within. What we are getting all the time is the Diary of a soul, not the scenery and circumstance of an external world.

It is naturally a very uneven book, with desert stretches where very little is found to reward the reader, and then patches of such fertility and richness that one reads with a sense of amazement and wonder. The variations are due to the fact that it is a book of flashes and intuitions rather than a piece of calm reflection and systematic thinking. It is a good illustration of the Bergsonian flow of the interior life. There is everywhere a dogmatic air and an attitude of finality as though the writer had exhausted every means of research, had probed every question to the quick, had sounded every problem to the bottom, and as though he were speaking with the authority of a complete expert, while, as a matter of fact, he is only saying what, with very little study or reflection, has flashed into his mind in the way of rapid insight. It is not easy to tell how well qualified Count Keyserling was for an adequate comprehension of the religious and social ideals of the different countries of the world. Where I can test his conclusions, they seem to me usually to be wise and sound. His success, however, is the result apparently not so much of a careful preparatory study as it is due to his remarkable capacity for getting *en rapport* with the various peoples whom he visited, and to his swift and sure intuitive powers.

Keyserling is at his best when he is interpreting mystical aspiration, or when he is dealing with mystical experience. Here, again, he does not report on the subject as a technical expert. He is not much interested in the historical background. He has little sympathy with some of the Christian mystics who have been guiding stars for those who have walked the mystical path. This is the way he disposes of one of the pillar mystics: "The other day, for purposes of comparison, I re-read Thomas à Kempis, who is regarded as a shining light by the whole of Christianity, and I confess that I felt disgusted. How very inferior is the state of soul which expresses itself in imitation! This grovelling before God, this undignified subordination, this constant fear of doing things badly, this process of torturing oneself for the sake of eternal bliss, has something offensively plebeian in it" (Vol. I, p. 65). He is as kindly disposed toward the esoteric and occult as he is stern toward the theological frame-work of the classical mystics. One reads with surprise a statement like the following: "Only the ignorant can doubt the truth of telæsthesia, of action at a distance, of the existence of materializations, whatever all that may mean. I was quite certain of this before they had been proved; I knew that they were possible in principle, and considered it out of the question that so many unimaginative people could go through extraordinary experiences which coincide so remarkably, without their being based on

some real fact. Any one who seriously concerns himself with the problem of the interaction of the body and the mind, of the substance and the principle of life, will recognize that there is no difference in principle between moving your own hand and moving a distant object" (Vol. I, p. 120).

This seems like a pretty bad start for dealing with a subject which peculiarly calls for sanity and balance. Nevertheless, the book yields a large amount of insight and wisdom about mystical experience and the culture of the inner life. There is an excellent report on *yoga* practice, over-enthusiastic perhaps, but valuable. "They become masters of their souls," he says, "in the same sense as athletes become masters of their bodies, and they are proportionately strong" (Vol. I, p. 128). He has much to say about the value of concentration, vitalization and quiescence. "Most of the *yoga* practices serve the purpose of making the soul quiescent." "All strong minds are marked by the fact that they are not fidgety, that they can relax and contract at will, and that they can give their attention to one problem more continuously than weak minds" (Vol. I, p. 127). "Man remains superficial because he does not know how to penetrate the unexplored and unknown regions of himself" (Vol. I, p. 133). "Any one who aims at a form of perfection which does not correspond with his inner possibilities, loses his time and misses his goal" (Vol. I, p. 137).

In his enthusiasm for interior culture and control Keyserling is inclined, I think, to overemphasize the value of ascetic practices, and he tends to glorify illness and disease as steps toward and preparations for the higher life of the soul. "The pearl is a product of a disease in the oyster." "I was blind once for a certain period after an operation on my eyes, and I must say that this time belongs to the richest in my life; it was so rich that I felt an unmistakable impoverishment when the sight of my eyes returned to me." "Whenever the body, for no matter what reason, fails as the vehicle of life, *or where such a state of affairs has been brought about intentionally,* [ital. mine] consciousness is enlarged in every one who possesses the capacity for enlargement. Then the soul lives entirely in its own world, unfettered by physical barriers. Hence the wonderful serenity of so many people who are dying or dangerously ill. Hence the frequent co-existence of a great mind and a weak body. Hence, too, the idea of mortification, of artificial weakening of the body through fasting, waking and chastisement. There is no doubt that violent means of this kind are capable of increasing and enhancing consciousness" (Vol. I, pp. 142–3).

He is excessively Platonic in his view that truth is latent in the soul and that the teacher is successful only when he works as "a midwife of ideas." "No teacher," he says, "can give what is not existent in a latent state; he can only waken that which is asleep, he can liberate what is imprisoned and bring to light what has been concealed. This is sufficient to secure the rank which men have always given to him [the teacher], for it happens all too rarely that an individual becomes conscious of himself without external assistance" (Vol. I, p. 154). Nevertheless, he insists that "every one knows that he is essentially more than what he can express" (Vol. I, p. 156), and that "nearly all historically great individuals were the bearers of preëxistent tendencies" (Vol. I, p. 172).

The Benares-section, under "India," is one of the most interesting parts of the *Diary*. He returns to his favorite topic of meditation and inward culture. The best form of spiritual culture, he declares, is silent meditation, which consists in "the opening of the consciousness to those influences which are waiting liberation in the innermost depths of the soul, and which, when liberated, connect the spirit directly with God" (Vol. I, p. 225). "The first thing which an Indian mother teaches her child is the art of meditation, the submersion at will into the highest which it can conceive. Once it has learned this art, then it does not require any exterior apparatus, no church atmosphere, no belief in dogma, no seclusion, to enter into communication with God." "The heart is only poorly developed in the Westerner. We imagine, because we have professed for one and a half thousand years a religion of love, that for this reason love animates us. That is not true" (Vol. I, p. 226–7).

This section contains a valuable study of the relation between faith and intellect and the disintegration which follows when faith and intellect fall apart and no longer coöperate. "At one time or another the moment comes when faith begins to lose its healing power. It has arrived when the intellect becomes emancipated. The intellect begins its dependent career as a destructive and disintegrating element; it cannot build up before it has matured. Whenever *it* becomes the dominant factor of a soul, the soul changes in its state of consciousness. It does not seem capable, as before, of realizing its depths directly, it can do so only through the intellect, and as the intellect is not in the beginning a match for deeper problems, the soul loses all contact with its depths. It becomes superficial" (Vol. I, p. 242). "Culture," he says elsewhere in this section, "in its real sense, is not to be achieved by way of widening the surface, but by a change of plane in terms of

depth, and this growing more profound depends upon the degree of concentration" (Vol. I, p. 273).

In the Himalayas, our philosopher is brought under the spell of nature more powerfully than anywhere else on his journey. The awe-inspiring mountains get into his blood and brain. "I have," he writes, "never faced such overwhelming substance. The Himalayas are not a mountain group like others; it seems as if the moon had burst and suddenly planted itself upon the green earth, so cosmically great, so unearthly, so out of all relation with the manifestations of this planet do they appear. . . . From the Himalayas, the Vedas have come, so have the Upanishads; all inspiration emanates from them even today" (Vol. I, pp. 312–3). This is a characteristic Emersonian exaggeration with which the *Diary* abounds.

In the second volume, Keyserling writes with tremendous appreciation of the virility of the racial stock in China and of the mental capacity of the Chinese as a people. He says: "The Chinese possess, unless I am very much mistaken, the greatest physical vitality of all human beings. Neither as individuals nor as a nation do they seem to be capable of exhaustion; they get over illnesses which would be fatal to other people; they can stand an excess of work (also of mental work) without evil consequences to their nerves and the worst debauches harm them very little" (Vol. II, p. 41). The longer he stays in China, the more his admiration grows and he attributes a great deal of the calm and depth to the long ages of Confucian culture. "It is impossible," he writes, "to conceive a more salutary general ideal. . . . It is *the* philosophy of normality, and, understood profoundly and essentially, according to its spirit and not according to the letter, it is undoubtedly the best philosophy for the masses. There is one point, however, on which we must not give way to any illusion: the philosophy of normality does not draw us upward, does not favor a high idealism, does not enhance our powers. Everything that goes to make up the highest pride of the West is due to the fact that *it has desired the impossible;* the Confucian always only wants the possible. All supreme ideals, those of Christianity included, were destined for a select minority" (Vol. II, p. 118). His final conclusion, as he comes to the end of his sojourn in China, is that the Chinese are "our equals in all essential mental directions," and one is surprised to find him saying that as a mystic the Chinaman is "the equal of the greatest Europeans and Indians."

The penetrating diagnosis of Japanese Buddhism is fresh and vital and, like all his other sections, marked both by strength and weakness.

He is all the time swept along with enthusiasm and his characterizations are full of subjective flashes. He feels that the Japanese mind "lacks religious profundity in the Indian sense"; "the inner life of the Japanese takes place on the whole in the domain of sensibility, just as in the case of children and young women." Patriotism, he thinks, is "the profoundest factor" in their lives.

Coming across the Pacific, he prepares himself for America with reflections such as these: "In principle the West has always been mobile, intent on new creations and new manifestations; the East has always inclined towards a static state of equilibrium." "I prefer Orientalism to Occidentalism because I value perfection in any form to success." His reflections among the big trees of California, at the Grand Canyon, at Yellowstone Park, and in Salt Lake City are extremely interesting and for the most part real 'hits.' He feels out our strengths and weaknesses with his usual assurance and with considerable insight. Chicago comes in for rather severe treatment at his hands—"Chicago is awful": "I am profoundly depressed"—and he reflects there that "Americanism proves that a complete and full inner life can be lived without a soul, without intellectual interests, without cultivated feelings (!)."

New York gave him more satisfaction—"this city impresses me more and more"; "as far as outer organization is concerned, it is undoubtedly at the head of mankind"—but he found us everywhere to be "prosperous" rather than "wise" or "profound." He sums us up thus: "No matter how extravagantly the American universities have been equipped, they are wanting in mental atmosphere. The American show-buildings are without symbolism, the Americans themselves are superficial to the point of soullessness, because the discrepancy between externals and internals, which also exists among us [Europeans], is even greater. The Americans are inwardly more crude and more youthful than we are" (Vol. II, p. 347).

This brief review of a massive book gives only a slender account of the world-wide travels and the interesting 'soundings' which the philosophical traveler made. Keyserling is essentially a mystic, in the loose sense of the word, and he consequently found himself most at home in the Orient and especially in regions where, from time immemorial, men have been devoted to the culture of the interior life. His *Diary*, as I have indicated, is somewhat capricious and temperamental, but it is rich in insights and it is worth much to get, as we do here, the fresh intuitive reactions of a highly gifted seer.

RUFUS M. JONES.

HAVERFORD COLLEGE.

NOTICES OF NEW BOOKS.

Il Pensiero di Spinoza. Per AUGUSTO GUZZO. Firenze, Mallechi Editore, 1923.—pp. 536.

The writer of this able book on Spinoza modestly justifies its appearance on the ground that there is no complete Italian translation of Spinoza's works: none, for example, of the *Short Treatise,* or of the *Cogitata metaphysica,* or of the *Letters;* and only an unsatisfactory version of the *Tractatus theologico-politicus.* There is, however, no need of any apology from Signor Guzzo, for the value of his book does not rest solely upon the service which it may render to his fellow-countrymen: it will prove useful to every serious student of Spinoza. Nor are any excuses necessary for his failure to exhibit the relations of Spinoza to Descartes, Giordano Bruno, and the Hebrew thinkers who are supposed to have influenced him, or for his failure to present the many different interpretations which have been offered to the Spinozistic system. Every system is, as he says, a world that can be studied by itself; and our author is perfectly within his rights in offering his own interpretation of a philosophy to which he has given his scholarly study. He wisely refrains from forcing upon the teaching a coherence which it does not possess, but gives ear, above all, to the word of the master. And although he regards the *Ethics* as the centre of Spinoza's thinking, he holds that a study of the minor writings is essential to a proper understanding of the system. Thus he sees in the *Apologia* a first synthesis of the philosopher's entire thought, out of which the system develops; indeed, he declares, his theory of religion, his metaphysics, and his politics are so intimately connected with each other that they may be considered as three aspects of a single thought. Few thinkers, he believes, offer an example of such a compact and connected development of their own thought as does Spinoza.

Nevertheless, he finds, Spinoza grafts an ethics upon a metaphysics which, rigorously developed, cannot but destroy the ethics. He strikes out resolutely towards pantheism but cannot safely reach a pantheistic conception of reality: we get a combination of theism and pantheism, of spiritualism and materialism, of idealism and realism. He does not succeed in showing us how the substance acts from the inside, as it were, when everything is determined by finite causes from without; how matter and spirit can be one and yet seem to be two, how thing and idea are one although we conceive them as distinct and even contraposed. Every battle against transcendence, Signor Guzzo declares, is fought under the flag of Bruno and Spinoza; and yet it is doubtful whether such philosophies contain the principles which will lead them to victory. The conception of reality as nature justifies *en bloc* everything that is. Since nothing is bound to be what it is not, there

can be neither fault nor error in it: everything is good and everything is true. We cannot distinguish between classes of good acts and classes of bad acts, between classes of true thoughts and classes of false thoughts. But, Signor Guzzo points out, Spinoza does not stick to those views; he always protested against such consequences and re-affirmed the distinction between the true and the false, the good and the bad. He holds that truth carries its own evidence in itself, but he does not develop the doctrine of the good along parallel lines with that of the true. He ought to have conceived the good as the affirmation of the good, as the good will, and the good will as the *norma sui et mali*. We have here a difficulty which lies at the very basis of the system from the beginning, and the effort to solve it is presented three times: in the *Short Treatise*, in the *Theological-Political Treatise*, and in the *Ethics*. And Spinoza's attitude toward this vital problem is always the same. In the words of our author, "metaphysics teaches that everything is equally perfect while morality presupposes a lesser and a greater perfection, and the passage from the one to the other, declaring that only when man reaches the greatest perfection, that is, wisdom which is clear knowledge and freedom from the passions, is he truly himself."

The book is the work of a discriminating scholar who has gone directly to the sources, and it is a genuine contribution to the Spinoza literature.

FRANK THILLY.

CORNELL UNIVERSITY.

The Theory of Justice. Modern Legal Philosophy Series. By RUDOLF STAMMLER. Translated by ISAAC HUSIK. With Appendixes by FRANÇOIS GENY and JOHN C. H. WU. New York, The Macmillan Company, 1925.—pp. xli, 591.

No more important and promising work could have been undertaken by the Association of American Law Schools than the publication of this series of master-works in the field of legal philosophy which was decided upon in the year 1910. Since that time many noteworthy volumes written by distinguished foreign jurists have been translated into English and issued in attractive form. It is not unlikely that this enterprise will come to be regarded as an epoch in the study of law in the United States. The Editorial Committee points out in its "General Introduction to the Series" that our own outlook on juristic learning has hitherto been insular and our juristic methods still primitive. "Philosophy of law has been to us almost a meaningless and alien phrase." "Without some fundamental basis of action or theory of ends all legislative and judicial interpretation are reduced to an anarchy of uncertainty. Social institutions, instead of being governed by an intelligent free will, are thrown back to the blind determinism of forces manifested in the natural sciences." "Philosophers must become lawyers or lawyers philosophers if our law is ever to be advanced into its perfect working."

The purpose of the Committee has been to exhibit faithfully and fairly all the modern view-points of any present importance, to present the views of the best modern representative writers in jurisprudence and philosophy of law. The latest volume issued is Professor Stammler's well-known *Theory of Justice* (*Die Lehre vom richtigen Recht*), which appears in an excellent translation by Professor Husik, who has already done fine service in presenting Rudolf von Ihering's *Der Zweck im Recht* in English form. Professor Husik has also written an introduction to the volume which is a masterful interpretation of Stammler's theory of law. The book is also equipped with two Appendixes, one on the "Critical System (Idealistic and Formal) of Rudolf Stammler," which is a translation of chapter vi of François Geny's *Science et Technique en droit privé positif;* the other on "Stammler and his Critics," a refreshing essay by Professor John C. H. Wu. All these additions will be welcomed by students of Stammler's philosophy of law, for each one of them will prove helpful to those who seek to penetrate and to evaluate the great German jurist's thought. The most thoroughgoing criticism is to be found at the end of Geny's contribution to the book: this too will be welcomed, for the reader often gains a better insight into a thinker's thought from the opponent than from the follower.

FRANK THILLY.

CORNELL UNIVERSITY.

Mind as Behavior and Studies in Empirical Idealism. By EDGAR ARTHUR SINGER, JR. Columbus, Ohio, R. G. Adams & Co., 1924.—pp. ix, 301.

Two assumptions which Professor Singer makes in this book are: first, that any significant hypothesis must be capable of experimental verification; second, that while all issues should be so conceived "that they can be put to experiment . . . we can no longer conceive experiment to be that which puts an end to issues" (p. viii). To the exposition of the former thesis he devotes Part One of his book (Chapters I–VIII); and to the latter, Part Two (Chapters IX–XIV).

"The eight essays forming Part One of the present collection are a frank attempt to show that mind *is* an 'observable object';" or, in other words, that "mind is behavior." But this must not be taken as identifying mind with body (p. vi), for, says our author, "all the categories of life and mind are to my understanding of them *teleological.* As such, I would defend with the best their right to a place in the most 'objective' science; but should be firm with the most 'spiritual' in denying to mind the meaning of mechanism" (p. vii).

The book opens with a criticism of "the 'analogy argument' which runs somehow thus: I am aware, and I alone am aware, that certain of my bodily acts are accompanied by mental states. When I observe similar acts in other bodies I infer that they too are accompanied by like states of mind" (p. 3).

Against this argument Mr. Singer points out: first, that "it is so far from self-evident that each man's mental state is his own indisputable possession, no one hesitates to confess that at times his neighbor has read him better than he has read himself" (pp. 3 f.); second, that an inference from the single case of my body's behavior being accompanied by mental states "has exactly no value at all," as "no one would be tempted to attribute eight planets to every sun because our own sun has eight satellites" (p. 5); third, that "no experience can be brought to confirm this inference" (p. 3), so that "it makes no practical difference to me whether I am right or wrong" (p. 6). For this, to him, unverifiable and therefore meaningless hypothesis the author would substitute the verifiable hypothesis that mind is behavior. For, so he argues, "experience is the only means of verifying assertions, and behavior is the only aspect of the beings we call living or conscious which is matter for experience" (p. 53). "Consciousness is not something inferred from behavior; it *is* behavior. Or, more accurately: Our belief in consciousness is an expectation of probable behavior based on an observation of actual behavior, a belief to be confirmed or refuted by more observation" (pp. 10 f. Also pp. 27 f., 78f.). And this definition holds not only of others' minds, but also of one's own. "It is essential to my thesis," we are told, "that I regard my own mind as behavior, quite as frankly as I take my fellow's mind to be nothing else" (p. 12).

I am inclined to think that when Mr. Singer denies the existence of a privately possessed consciousness, it is not sensibility which he is denying (see Chaps. V and VII), but some mystic entity, a "soul 'come from without,'" or a "thing-in-itself" (pp. 16 f., 39 f.), supposed to reside inside the body, but never to be observed, whether by oneself or others. For in answer to the question as to the sensation which does not exhibit itself in behavior he replies: "Here . . . we come upon the reason for regarding sensibility as 'passive,' . . . For the behavior . . . that measures the intensity of our organism's sensation is not necessarily *its* behavior at all, . . . but *virtual* behavior; . . . the behavior we should have reason to expect if such and such experiments were tried" (pp. 92 f., also pp. 95 ff.).

It is admittedly possible, then, to have 'passive' sensations, *i.e.*, I suppose, sensations which are felt, but not acted. But it would also seem possible to be aware that others have sensations which are forever hidden from the observer. "If," says Mr. Singer, "the part of my behavior dependent on my eyes being open and directed toward an object is identical when that object is blood and when it is grass, while that of other men similarly placed is different toward the two, I judge myself to have only one color-sensation where they have two" (pp. 12 f.). Obviously, then, color-sensations and behavior are not identical. For if they were, then in observing the varied behavior of the others, I would have observed all there is to observe, and could not judge them to have two color-sensations (which, *ex hypothesi*, I being color-blind can never share) to my one.

With the author's criticism of the notion that so-called 'bare' or 'immediate' data of consciousness constitute the ideational bricks out of which I construct my world (pp. 11 ff.), as well as with his assertion that, far from its being true that the subject understands himself best, it may take "all the science of all the world to make out whether A is in love or whether B sees red" (p. 26; also pp. 143 ff.), we may most heartily agree. The view that consciousness is something other than behavior is dependent neither on "English 'sensualism,'" nor on solipsism; and Professor Singer's trenchant criticism of both these fallacies should help lay their ghosts.

But while Mr. Singer would identify mind with behavior, he would guard against a mechanical interpretation of life. "Each living thing has a place in a class of mechanisms" (p. 59); its very "stuff and material" is that of its mechanical medium (p. 111). But life can be defined only in terms of the purpose towards self-preservation manifested by organisms (pp. 60, 64). By purpose, however, is not to be understood "*desired* result," for "no one could verify the 'hypothesis' of desire in fellow-man, fowl, shrub, or amœba" (pp. 65, 66). Purpose, like mind, means something observable, viz., the "average common result" (pp. 67, 263); and sometimes not even this but only "a very small percentage" of the results, a calculable probability "in the domain of self-preservative behavior," behavior, namely, which ensures its own recurrence (pp. 68, 69, 71). Now, it may be unnecessary to attribute desire to amœba or shrub, but shall we deny to our author the conscious desire to make his meaning clear? The desires I profess may not, as behaviorists are fond of pointing out, be the desires which determine my conduct; and the latter may conceivably be read off more accurately from my conduct than from my words. But observation of behavior ('extrospection') could not be a more accurate method of determining what is in mind than is introspection, if there were no such thing as introspection.

More difficult than the problem of purpose is the problem of freedom, the concept of which is, we are told, implicit in that of purpose (p. 60), although if purpose means merely a calculably probable result it is not easy to see how freedom is implied. Freedom is not "the possibility of doing different things under the same circumstances," which is mere caprice. Freedom is "the invariance of purpose in a variety of mechanical situations" (p. 61, and note). But this is freedom only if the invariant purpose is a consciously held purpose, not merely a probable result. And whence this freedom which is not to be found in the stuff out of which organisms are made? This problem is puzzling, we are assured, only so long as we persist in thinking of wholes as sums of their parts. For it is no more absurd to say, "If there is no freedom in the part there can be none in the whole," than to say, "If there is no triangularity about each of these lines [which compose a triangle] there can be none in their combination" (p. 62). But this analogy proves nothing. For in a world of straight lines

only, *i.e.*, in a world of one dimension, no triangle can be constructed. Only in a preëxistent plane or world of two dimensions is it possible, by means of straight lines, to delimit a triangle. The triangle is not constructed out of three straight lines which have no triangularity, but out of three straight lines *and* a plane. Whatever we may think of the construction of free organisms out of un-free parts, the analogy of a triangle certainly throws no light on the problem.

Much more suggestive of the line along which we are to seek a true theory of freedom is the discussion of Part Two, and especially of Chapter X, where the alleged subjectivity of judgments of religious, moral and aesthetic appreciation is discussed (p. 192). We are there assured that "a judgment of beauty" differs from "a judgment (say) of size" not as to matter of fact, but only in its greater range of "variable error" (p. 197). But while "the answer to every meaningful question must be wrung from experience and hence must involve a question of fact," we are not to take this "as excluding all choice on the part of the describer of Nature" (p. 198). For "these facts presented in Nature are themselves the resultants of [precedent] classification: if they were not they could not be 'presented'" (p. 206). Our assumption that "the course of Nature is capable of complete expression in universal judgments" is based on no detected "eagerness to oblige" on the part of facts, but rather on this, that "we have the remaking of the facts within our power. . . . In the resistance that facts offer to our desires [in the way of classification] is always to be detected the opposition of our old choices to our present needs. It is for this reason that the search for a universal formula for Nature is always bound to succeed" (p. 213). And this reading of unity into Nature is justified by the fact that without a principle of unity "no description, no experience and, consequently, no Nature is possible" (p. 218).

This insight modern philosophy owes to Kant (pp. 218, 286). But Kant sought unity in the application to Nature of static, ready-made categories, whereas "it is not [as Kant supposed] the unity of our thought but [as Hegel saw] our thought's struggle after maximum unity that constitutes experience what it is" (p. 219). This unity has been sought in a mechanical explanation of all phenomena, the biological included, though here Professor Singer thinks it is inadequate (Chap. XI), since life implies final causes (Chap. XII). Unfortunately Chapter XII is only "an abstract" whose inclusion mars an otherwise excellent book. It should have been expanded or omitted. For its summaries are meaningless except where they repeat what has already been said in Chapter IV.

L. P. CHAMBERS.

WASHINGTON UNIVERSITY.

Essays in Metaphysics. (Volume 5 of the University of California Publications in Philosophy.) Edited by GEORGE P. ADAMS and J. LOEWENBERG. Berkeley, University of California Press, 1924.—pp. 220.

This volume of essays contains contributions from seven writers, five of them members of the staff of the University of California and two of them visitors of distinction. The essays and authors are as follows: "The Character of Metaphysical Inquiry" by John Laird (Mills Lecturer for 1924), "The Philosophy of Nature in the Light of Contemporary Physics" by V. F. Lenzen, "The Method of Metaphysics" by W. R. Dennes, "The Idea of the Ultimate" by J. Loewenberg, "Metaphysics and Value" by D. W. Prall, "Reason and Experience" by G. P. Adams, and "The Discontinuities of Evolution" by A. O. Lovejoy (Howison Lecturer for 1924).

Professor Lovejoy's essay deals with the hypothesis of "emergent evolution" which has been stated recently in somewhat similar form by many writers of diverse philosophical views. It points out clearly certain distinctions (mostly of a dialectical sort) between the diverse forms of the hypothesis and suggests the implications of these diverse forms for some other related issues. Finally it reviews some evidence for three points at which there seem to be discontinuities in the cosmic processes,—the 'jumps' of an electron within the atom, as described by the quantum theory of contemporary physics, the appearance of the organic, and especially the appearance of intelligence in human beings. In this essay, as usually in the writings of Professor Lovejoy, the distinctive merit lies in subtle analysis and in the tracing of historical affiliations of current ideas with past systems.

Professor Adams gives us in his paper a delightful restatement of the idealistic position. He betrays a keen sense for the empirical data of daily living and yet indicates a controlling relish for speculative interpretations. Most realists would claim that our ideas must be taken to facts not merely for proof but for a determination of their specific value; and most idealists would seem to regard facts as finding their sole final cause in the generalizations and systematic bodies of ideas which lead us far beyond the humble facts. Professor Adams stands enough with the latter group to deserve on that principle his classification as idealist. Reason, he tells us, is a term of many meanings. Taken as standing for the field of indubitable certainty, it is in contrast with the larger realm of doubt and confusion; hence in this sense, reason is but a part of experience. Taken as standing for the greatest amount of attainable meaning and inclusiveness of understanding, it is in contrast with the partial and fragmentary items of detached sense-data or immediate contact with reality; hence in this sense, reason is the larger realm within which experience is a small area. Descriptive of this second viewpoint, a well-phrased sentence states the nature of an idea thus: "One general function of an idea is definable as that which increases the area of our world which we may take into our reckoning and

which we may know" (p. 163). Finally reason has a third sense, when it is taken for the expression of the mind's interests and purposes in the institutions and coherent structures (like the body of mathematical knowledge) of our human world. In this sense reason is civilization and stands in contrast with the barbaric and brute levels of life. "I know not how else civilization may be described except as the totality of structures which man's spirit has built up because they provide a habitat more fitted to the energies of his spirit than are just the data which he merely finds" (p. 165). The metaphysical problem which the last position raises is whether reason in this third sense is distinct from or identical with reality. And Professor Adams discloses once more his idealistic bent in indicating that he regards the rational structures as also "discoveries and disclosures of the nature of things" (p. 169).

Another paper of note in the volume is the opening essay by Professor John Laird. The conception of metaphysics which he defends is in striking contrast with that indicated in two essays which follow. Professor Laird holds that philosophy has no distinctive method and no distinctive subject-matter. It is to be distinguished from the other sciences neither by the simplicity nor by the priority nor by the comprehensiveness of its principles. Rather "philosophy is the attempt to discover facts and principles which can withstand any possible criticism; and having discovered these, to follow them whithersoever they may lead" (p. 9). That is, while the other sciences deliberately and for methodological purposes often limit their inquiries to what seems to lie within "a dominant train of relevance" (p. 15) and have hence refused to consider questions relevant to other points of view, philosophy is just the welcoming of criticism from every quarter and the attempt to discover what will withstand all such criticism. Of course every science then comes to periods in its development when it becomes inevitably philosophical. To define philosophy in such a way as to make it intrinsically distinct from the other sciences would be to confine it to petty matters which do not deserve consideration. Rather philosophy, learning from the other sciences, must in turn help in the criticism which they themselves come to seek. Professor Laird's conception of the nature of metaphysical inquiry is quite prosaic, and it will doubtless be unsatisfactory to certain philosophers who like to think of themselves as discoursing of a reality more ultimate than that handled by the scientists. But it is prosaic because it is critical instead of being eulogistic. At least it is a conception which makes metaphysics an intelligible and desirable study. And it is in contrast with another view (apparent at times in other essays of this volume) which exalts metaphysics but is unable to determine specifically what metaphysics is about.

STERLING P. LAMPRECHT.

UNIVERSITY OF ILLINOIS.

The Philosophical Presuppositions of Mathematical Logic. (Cornell Studies in Philosophy, No. 17). By HAROLD R. SMART. New York, Longmans, Green and Co., 1925.—pp. vi, 98.

The work before us does not deal, except in general terms, with the axioms and definitions of the logical calculus, but with related speculations inspiried by logic or mathematics, of those who happen to be not only philosophers but mathematical logicians as well. Questions concerning the calculus and questions inspired by the calculus are treated as one throughout. At the end of the Introduction, however, certain of the "weaknesses" of mathematical logic (the logical calculus) do indeed appear. "One such weakness is the failure of any symbolism to distinguish properly between a universal term and its particular" (p. 10). If this means 'between a general term and the individual which exemplifies it,' then, of course, it is clear that no symbolism directs the rules of its own application and such a criticism applies with equal force to mathematics as a whole. Again, "complementary to this fertile source of error is the impossibility of dealing, by means of such a symbolism, with the intension of terms" (p. 10). Historically this has not turned out to be impossible but only less natural and less fruitful of results. And yet again, "other difficulties might be discussed, for example the notorious inability to represent by a symbolism the processes of induction" (p. 10). The existence of the theory of least squares and in general the theory of probability suggests certain critical questions here. Or does induction mean a theory of how logic or mathematics is to be applied? Or, how the axioms are to be got? Thus, it is for the author a matter of surprise that no account is given of the inductive process by which axioms are obtained. "Of primitive knowledge, self-evidence, and general propositions we shall hear much in the sequel. Yet all that can be said about such things so far as their logical nature is concerned practically amounts to a confession of ignorance. There they are; and we cannot dispense with them as factors in deductive inference" (p. 61).

The reviewer misses, however, something he had hoped to find. For example, that the ϵ-relation of Peano and *Principia Mathematica* is extralogical; that to represent implication as equivalent to a disjunction results in a delimitation of the universe of things true or untrue; some notice of Professor Guthrie's solution of Mr. Russell's paradoxes, a matter overlooked by even Professor Lewis' exhaustive bibliography. Critical questions like these, the reader will find are not included in the general plan. One wonders, indeed, how much sympathy or understanding there is of such questions even if "space did allow," for at the very end, we read: "Mathematical logic—absolutely formal logic, operating by means of symbols—will have . . . to discover . . . the various empty forms into which any sort of material may be arranged. Since the form and the content of knowledge are absolutely distinct, the only movement of thought is that of linear progression, according to the law of abstract identity or tautology, while the result

of such a process is a mechanical repetition or reshuffling of the meaningless counters or symbols, with which it began" (p. 97). Yet the solution of the insolubilia is a critical question which hinges on the development of just such a technique.

The chapter on "The Modern Origin and Development of Mathematical Logic" summarizes well-known results, but one might wish that its conclusions had been handled with more respect for its motives. Which is logically prior, ordinal or cardinal numbers, may or may not be a matter of choice, but, in view of his analysis, can Royce's conclusion fairly be termed "dogmatic" or "uncritical"? It is here and there that our author's tone offends. Of course no one is bound to prove that theorems relating to quantity can be generalized so as to become theorems concerning order. It is enough to let his opinion stand or fall with the work of Dedekind and Cantor. And, because Royce calls these conceptions "ideal," the question of their "origin" (empirical or not) is surely not decided. Royce values "the immediate givenness of the Cantorian infinite," says our author, "but as a matter of fact no series of the type in question is ever given as complete; there are always terms beyond" (p. 51). But the Cantorian infinite, we had always supposed, is given in connotation, not in denotation.

"Perhaps the most important element in this conception of an abstract logic is . . . the naïve, uncritical postulation of an external, *i.e.*, spatial relation between the world of thought and the physical universe" (p. 59). Does this mean that the relation of an object to its class is a spatial relation? Is the given which exemplifies the law related spatially to that law? And does Royce say that? The reviewer seems to remember having heard Royce once characterize Kant's dichotomy of the 'inner' and 'outer' as 'unfortunate.' After this criticism, we come, as we turn the page, upon the outcome, namely, that the "views [of the mathematical logicians] on this point [the relation of order to quantity] are erroneous," and that "it seems safe to conclude that no such mathematical concepts as those of the continuum and the infinite . . . can render direct service in the field of philosophy" (p. 52).

HENRY BRADFORD SMITH.

UNIVERSITY OF PENNSYLVANIA.

The following books also have been received:

The Origin, Nature and Influence of Relativity. Lowell Institute Lectures and Los Angeles Lectures. By GEORGE DAVID BIRKHOFF. New York, The Macmillan Company, 1925.—pp. vii, 185.

The Attributes of God. The Gifford Lectures. Delivered in the University of St. Andrews in the Year 1924–25. By LEWIS RICHARD FARNELL. New York, Oxford University Press, 1925.—pp. x, 283.

Mind and Matter. A Philosophical Introduction to Modern Science. By C. E. M. JOAD. New York and London, G. P. Putnam's Sons, 1925.—pp. 204.

Contemporary British Philosophy. Personal Statements (Second Series). Edited by J. H. MUIRHEAD. New York, The Macmillan Company, 1925. —pp. 365.

Fool's Advice. By EDGAR A. SINGER, JR. New York, Henry Holt and Company, 1925.—pp. x, 194.

Dante's Conception of Justice. By ALLAN H. GILBERT. Durham, North Carolina, Duke University Press, 1925.—pp. vii, 244.

History of Mediaeval Philosophy. Vol I. From the Beginnings to Albert the Great. By MAURICE DE WULF. Translated by Ernest C. Messenger. London, Longmans, Green and Co., 1925—. pp. xvi, 416.

A System of Formal Logic. Part I. The Problem of Single Implication. By HENRY BRADFORD SMITH. Columbus, Ohio, R. G. Adams & Co., 1926.—pp. 49.

Johannes Scotus Erigena. A Study in Mediaeval Philosophy. By HENRY BETT. Cambridge, Cambridge University Press, 1925.—pp. 204.

Creative Freedom. By J. W. T. MASON. New York and London, Harper & Brothers, 1926.—pp. xiii, 538.

The Three Conventions. Metaphysical Dialogues. By DENIS SAURAT. New York, Lincoln MacVeagh, The Dial Press, 1926.—pp. x, 128.

Studies in Rhetoric and Public Speaking. In Honor of James Albert Winans. Edited by A. M. DRUMMOND. New York, The Century Company, 1925.—pp. x, 300.

Grundgesetze des Sollens. Elemente der Logik des Willens. Von ERNST MALLAY. Graz, Leuschner & Lubensky, 1926.—pp. 85.

Die Freiheit des Willens und ihre Grenzen. Von FRITZ MEDICUS. Tübingen, J. C. B. Mohr (Paul Siebeck), 1926.—pp. iv, 119.

Wahrheit und Erkenntnis-Struktur. Erste Einleitung in den Aletheiologischen Realismus. Von SCHALWA NUZUBIDSE. Berlin und Leipzig, Walter de Gruyter & Co., 1926.—pp. xi, 196.

Die Entstehung des Geniebegriffs. Ein Beitrag zur Ideengeschichte der Antike und des Frühkapitalismus. Von EDGAR ZILSEL. Tübingen, J. C. B. Mohr (Paul Siebeck), 1926.—pp. viii, 246.

Das Verstehen. Grundzüge einer Geschichte der Hermeneutischen Theorie im 19. Jahrhundert. I. Die Grossen Systeme. Von JOACHIM WACH. Tübingen, J. C. B Mohr (Paul Siebeck), 1926.—pp. viii, 266.

Nietzsche und die bildende Kunst. Von WILHELM STEIN. Berlin, Carl Heymans Verlag, 1925.—pp. 20.

Institutiones Metaphysicae Generalis. Eléments d'Ontologie. Tomus Primus—Introductio et Metaphysica de Ente in Communi. Par P. DESCOQS. Paris, Gabriel Beauchesne, 1925.—pp. 638.

NOTES.

The Mediæval Academy of America has recently been incorporated with the purpose of conducting and promoting research, publication and instruction in all departments of the letters, arts, science and life of the Middle Ages. The president is Professor E. K. Rand of Harvard; the vice-presidents are Professors Manly (Chicago), Haskins (Harvard), Willard (Colorado); the treasurer is Mr. John Nicholas Brown; the clerk Dr. Ralph Adams Cram. The Academy maintains a quarterly journal, *Speculum*, of which the managing editor is Dr. F. P. Magoun, Jr., Harvard University, and in which it means to publish not only the results of research but also articles of broader character. The Academy proposes many other functions. One of the chief is that of serving as a clearing-house for information and a help to coöperation among those concerned in all the various sides of mediæval study. Enthusiastic response has been found in Britain and Germany; in France, especially through the Association Guillaume Budé; and in Belgium through Professor Maurice de Wulf of Louvain, who during his stay at Harvard aided the inception of the Academy. Persons in any part of the world who are pursuing original research on any aspect of the Middle Ages are invited to send their names and information as to their subjects of study to the clerk of the Academy, who acts as its secretary. There are various forms of membership in the Academy. Any person interested in becoming a member may obtain further information from the office of the Academy, room 312, 248 Boylston Street, Boston, Massachusetts.

The British Institute of Philosophical Studies, which was founded in April of last year, has just issued the first number of *The Journal of Philosophical Studies*. The Journal is edited by Mr. Sidney E. Hooper, with the assistance of a number of eminent thinkers in the field of philosophy, and is published by Macmillan and Co., London. The contents of the January number appear below in the list of articles in current philosophical periodicals.

Symposion, a journal of philosophical research and expression, will appear at irregular intervals under the editorial supervision of Wilhelm Benary (Erlangen), Ernst Cassirer (Hamburg), Hans Driesch (Leipzig), Paul Hensel (Erlangen), Rolf Hoffmann (Erlangen), P. E. Liljeqvist (Lund), William McDougall (Harvard), José Ortega y Gasset (Madrid), Bertrand Russell (London), Max Scheler (Köln), and Friedrich Würzbach (Munich). The price of a volume, composed of four numbers, will be twenty-one reichsmarks. Manuscript and editorial correspondence should be addressed to the publishers—The Philosophical Academy, Erlangen, Germany.

Dr. Harry A. Wolfson has been appointed to the newly established Nathan Littauer Professorship of Jewish Literature and Philosophy in Harvard University.

Professor W. D. Ross of Oriel College, Oxford, the Editor of the Oxford Translation of Aristotle, will give a course in the Summer School at Harvard on Ethics with special reference to the ethics of Aristotle.

Professor Étienne Gilson of the Sorbonne will be Exchange Professor at Harvard next year, and will give a course on Mediæval Philosophy and an advanced course on the influence of Mediæval Thought upon Descartes and Malebranche.

Dr. D. L. Evans, Instructor in Philosophy at Ohio State University, has accepted a call to a Professorship at Ohio Wesleyan University. Dr. Marvin Faber of Harvard University succeeds Dr. Evans at Ohio State University.

Mr. Hugh V. White has been appointed Lecturer in the Psychology and Philosophy of Religion at the College of the Pacific and will conduct courses in the philosophy department of that institution.

Professor G. Watts Cunningham has been appointed Assistant Dean of the Graduate School in the University of Texas.

Professor Alfred H. Jones of Brown University has been appointed head of the department of philosophy at the University of Rochester, as successor to Professor G. M. Forbes, who becomes Professor Emeritus at the end of the current academic year.

Dr. Christine Ladd-Franklin, Lecturer in Psychology at Columbia University, was presented with a Ph.D. diploma on the occasion of the commenoration day exercises at the Johns Hopkins University on February 22. Mrs. Franklin qualified for the degree forty-four years ago, but could not receive it because the university at that time conferred no degrees upon women.

The twenty-fifth anniversary of Professor Edward L. Thorndike's connection with Teacher's College, Columbia University, was celebrated on Friday, February 19, with a dinner at which about two hundred and fifty of Professor Thorndike's colleagues, former students and friends were present. Professor Eugene L. Smith presided, and there were speeches by Dean James E. Russell, Dr. Frederick P. Keppel, Dr. J. McKeen Cattell, Professor G. D. Strayer, President Henry Suzzallo, Dr. R. S. Woodworth, President Nicholas Murray Butler and Dr. Thorndike.

Editor's Correction: In the review of Brentano's *Psychologie vom empirischen Standpunkt*, published in this REVIEW, Vol. XXXV (March, 1926), pp. 189–190, the work under consideration was erroneously referred to as "the second volume" of the original work of 1874. That work still remains a fragment, the proposed second volume never having been published, although a new edition of its concluding chapters was issued in 1911, revised by Brentano. The second volume of the Meiner edition (1925) contains chapters 5 to 9 of Book 2 with additions to the issue of 1911, and includes Brentano's dictations in the period immediately preceding his death (February 22, 1915, to March 6, 1917) on "Intuitions, Concepts, and Objects of the Understanding" and notes by the editor, Oskar Kraus.

The confusion arises from the fact that a part of what Brentano originally designated the "*zweites Buch*" is now reissued as "*zweiter Band.*"

We give below a list of articles in current philosophical periodicals:

THE AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY, III, 4: *G. H. Miles*, The National Institute of Industrial Psychology; *R. F. Alfred Hoernlé*, Freud's Psychoanalytic Theory of Taboos of the Dead; *R. C. Mills*, Economic Aspects of Population; *Kenneth T. Henderson*, Troeltsche's Philosophy of History; *Vittorio Macchioro*, Changes in Christian Thought; *J. Alexander Gunn*, Great Thinkers (2) Bergson.

THE HARVARD THEOLOGICAL REVIEW, XXIV, 2: *Hans Windisch*, Literature on the New Testament.

THE HIBBERT JOURNAL, XXIV, 2: *J. S. Mackenzie*, God as Love, Wisdom and Creative Power; *A. S. Pringle-Pattison*, Prayer and Sacrifice as a Commentary on Man's Ideas of God; *John Baillie*, The Idea of Orthodoxy; *Angelo Crespi*, "Actual Idealism": An Exposition of Gentile's Philosophy and its Practical Effects; *Ernest Williams*, The Religious Bearing of Bergson's Philosophy; (*Mrs.*) *M. Stocks*, The Economic Family and the Economic Man; *Reginald F. Rynd*, The Social Gospel; *G. G. Coulton*, The Stigmatisation of St. Francis: A Reply to Dr. Seton; *Mary Bradford Whiting*, "The Burning Bush": A New Light on the Relations between William Cowper and John Newton; *H. A. Garnett*, A Layman's Plea for the Separation of the Creeds from Worship; *Edmond Holmes*, Tyrell on "the Church"; *G. M. Sargeauant*, Dance and Design in Greek Life; *J. M. C. Crum*, The Document "Q"; *W. D. Hambly*, The Significance of Corporal Marking.

THE JOURNAL OF PHILOSOPHY, XXIII, 1: *George Boas*, The Truth of Immediate Knowledge; *William S. A. Pott*, A Note on "The Place of Ethics in Philosophical Education." 2: *H. Klüver*, M. Weber's "Ideal Type" in Psychology; *J. H. Randall, Jr.*, The Twenty-Fifth Annual Meeting of the Eastern Division of the American Philosophical Association. 3: *C. J. Ducasse*, On the Nature and Observability of the Causal Relation; *H. Wildon Carr*, The Reform of the Leibnizian Monadology. 4: *Harold R. Smart*, Prolegomena to the Logic of Science.

JOURNAL OF PHILOSOPHICAL STUDIES, I, 1: *S. Alexander*, Art and Science; *G. Dawes Hicks*, The Metaphysical Systems of F. H. Bradley and James Ward; *Morris Ginsberg*, Emotion and Instinct; *J. Arthur Thomson*, Different Kinds of Evolution; *John S. Mackenzie*, The Present Outlook in Social Philosophy; *F. B. Jevons*, The Purpose of Philosophy; *Bertrand Russell*, Perception; *T. H. Pear*, Psychology.

THE JOURNAL OF RELIGION, VI, 1: *Theodore Gerald Soares*, Religious Education in the Last Twenty-five Years; *A. Eustance Haydon*, Twenty-five Years of History of Religions; *Matthew Spinka*, The Conversion of Russia; *Daniel C. Holton*, A new Interpretation of Japanese Mythology

and its Bearing on the Ancestral Theory of Shinto; *Edwin C. Aubrey*, The Social Approach to Religion as a Method of College Teaching.

MIND, XXXIV, 137: *R. H. Nisbet*, The Foundations of Probability; *Alfred Sidgwick*, Distinction and Purpose; *C. A. Strong*, The Genesis of Appearance: 1. Distance and Magnitude; *T. Whittaker*, Vico's New Science of Humanity (1).

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